

R E P O R T R E S U M E S

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ANNOTATED BIBLIOGRAPHY ON CREATIVITY AND GIFTEDNESS.

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(ATYPICAL), NORTHRIDGE, CALIFORNIA, PSYCHOLOGICAL ABSTRACTS

THIS ANNOTATED BIBLIOGRAPHY REPRESENTS A SAMPLING OF
PUBLISHED WRITING ON CREATIVITY AND GIFTED CHILDREN SINCE
1960. THE LIST WAS COMPILED FOR EDUCATIONAL RESEARCHERS. IN A
FEW INSTANCES THE ANNOTATIONS HAVE BEEN MODIFIED OR ABRIDGED
FROM THOSE FOUND IN "PSYCHOLOGICAL ABSTRACTS" OR OTHER
JOURNAL ABSTRACTS. SOME OF THE ANNOTATIONS HAVE PREVIOUSLY
APPEARED IN "THE GIFTED CHILD QUARTERLY." (LP)

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ANNOTATED BIBLIOGRAPHY ON CREATIVITY & GIFTEDNESS

(indexed by subject)

compiled by

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INTRODUCTION: EXPLANATION OF THE BIBLIOGRAPHY

The appended annotated bibliography represents a résumé of the more significant writing on creativity and gifted children since 1960. In general, the objective has been to compile a list with an educational bias which will be maximally helpful to the knowledgeable consumer of research. In compiling the bibliography, emphasis has been placed on the following:

1. Research which contains implications for practice.
2. Theoretical statements of some degree of specificity.
3. Investigations of new aspects of the subject.
4. Citations in those areas not well covered previously.
5. Bibliographies, magazine symposias and, other heuristic materials.

The following have been de-emphasized or (as in case 3) eliminated, in order to give priority to the previously mentioned categories:

1. Popular articles (such as those indexed in Reader's Guide).
2. Hortatory material, unless of unusual significance.
3. Material published in our earlier efforts (Gowan 1961). (This bibliography is available from the National Education Association for \$1.00.)
4. Case studies or information releases to the public.
5. Reports of practice in particular school districts. (However, important articles, especially on creativity implementation, have been included.)
6. Curriculum materials and other matters put out by school districts, much of which are rapidly dated or difficult to obtain.
7. Mimeographed material and other unpublished sources of difficult access (except in cases of important and recent research which may be published later).

In view of space restrictions, annotation has been kept to a minimum consistent with value to the reader. The results of research are briefly summarized wherever it is possible to do so in a short space: the reader should be warned against oversimplification under such circumstances. In those cases where an article has had several publication outlets, or an author has published similar articles, these have

been noted, since they afford the reader additional opportunity to find the material conveniently.

Citations are alphabetized in one listing by name of the principal author. Citations by the same author are placed in chronological order from earlier to later publication date, regardless of whether there is a collaborator. It is thus possible merely by knowing the author's name and the date of a citation to place it uniquely in the array. The citations are indexed in this manner. The bibliographic index where these citations may be found by subject has been arranged in a numbering system which may serve as a model for future attempts at bibliographic filing in this area. The general headings are as follows: 0. Creativity; 1. General; 2. Theory and Objectives; 3. Characteristics; 4. Practice; 5. Curriculum; 6. Guidance; 7. Administration; 8. Research. The decimals on sub-headings under Creativity are the same as the integer headings under Giftedness. This system is generally congruous with that used in the 1961 Bibliography. Other finer subdivisions will be found in the index itself. A scholar wishing to find the literature on any subject should look under that subject in the index and then consult the cited references in the main bibliography. This cross-indexing feature is one of the most useful aspects of this booklet, since it allows for the quick inspection of all citations on a particular subject. For those who wish it, there is appended to the index a subject glossary and an index of proper names.

In a few instances annotations have been modified or abridged from those found in Psychological Abstracts or journal abstracts. Some of the annotations have previously appeared in The Gifted Child Quarterly. To all of these sources the compiler expresses his thanks, as well as to original writers who occasionally are quoted direct.

The compiler wishes to thank Jane Gowan, Loretta Dick, Susan Kantor, Ferne Wright, Maria Hodgson, and Shirlee Kalish for help in compilation of this bibliography. Any ideas expressed herein are the responsibility of the compiler, and do not necessarily reflect the views of the U. S. Office of Education.

BIBLIOGRAPHY

Abdel-Ghaffar, Abdel-Salam, Abdel-Kadar. Intelligence, Interests, and Personality Factors of the Creative Adolescent. Unpublished doctoral thesis, University of Denver, in process, 1963.

Abdel-Razik, T. M. "An Investigation of Creative Thinking Among College Students." Unpublished Ed. D. thesis, Ohio State University, 1963. Dissertation Abstracts 24: 2775; 1964.

Compared freshmen and seniors on a number of creativity tests and other measures. Found women more creative than men. Some freshmen were above seniors. Measures of scholastic achievement did not predict creativity.

Abraham, W. "Motivating the Gifted Underachiever." (pp. 221-25) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., 1963. (Cf. Education 83: 468-71; 1962.)

Suggests a number of ways of motivating the gifted underachiever, but no record of practice.

Adler, M. "A Study of Attitudes Towards the Gifted Child as a Causal Factor in his Socio-Personal Adjustment." Gifted Child Quarterly 5: 134-37; Winter 1961.

A careful study of the various rejectant attitudes from school, teachers, peers, parents and the public which may impinge on and influence the development of the gifted child. Extensive bibliography.

Adler, M. "A Study of the Effects of Ethnic Origin on Giftedness." Gifted Child Quarterly 7: 98-102; Autumn 1963.

A survey of the literature on the percent of gifted among various ethnic groups, with reasons why the value and educational patterns of Jews help to explain the high proportion of gifted among them.

Adler, M. "The Ethnology of a Group of Gifted Children." Gifted Child Quarterly 8: 40; Spring 1964.

130 gifted children in Ohio listed religious affiliation as 70% Protestant, 14% Catholic, 8% Jewish and 8% none. The Jewish group was more heavily represented than population incidence.

Adler, Marilynne, and others. "A Study of the Effects of an Acceleration Program in the Toronto Schools." Ontario Journal of Education Research 6: 1-22; 1963.

Few differences in achievement were observed in a high school acceleration program.

Ahrens, Dolores. "A Study of Educational Achievement in Relation to Creative Thinking Abilities and Intellectual Ability." Unpublished Ed. D. thesis, University of Illinois, 1962. Dissertation Abstracts 23: 4252; 1963.

Achievement is generally somewhat higher in the high creative group, but the relative influence of IQ in determining achievement is significantly lower than is true of the low creative groups.

Alberty, Elsie. "The Identification and Development of Talent in Heterogeneously Grouped Students in a General Education Program at the Secondary School Level." Cooperative Research Project 320. Washington, D. C.: U. S. Office of Education, 1959.

A model of the talented student based on a description of talented behavior. "Talent involved more than intellect; it is a function of the entire personality."

Alger, J. R. M., and Hays, C. V. Creative Synthesis in Design. Englewood Cliffs, New Jersey: Prentice-Hall, 1964.

Allen, E. E. The Effect of Certain Experiences on Divergent Thinking. Unpublished doctoral thesis, Gainesville: University of Florida, in process, 1963.

Allen, M. S. Morphological Creativity. Englewood Cliffs, New Jersey: Prentice-Hall, 1962.

Ammons, R. B., and Ammons, C. H. "How to Foster Genius: McCurdy Extended." Proceedings of the Montana Academy of Science 21: 138-44; 1962. (Cf. ibid., 145-59.)

"A learning analysis was made of the conditions found by McCurdy to characterize the childhoods of male geniuses. Applications of these principles were then made, suggesting ways to facilitate the development of genius. It is not at all surprising that genius develops so seldom in our current cultural environment."

Anastasiow, N. "Maximizing Identification of the Gifted." Journal of Educational Research 57: 538-41; 1964.

Palo Alto, California researcher develops hypotheses and procedures to minimize cost and delay in screening for gifted.

Anderson, H. H. "Developing Creativity in the Child." Michigan State College. (Prepared for the 1960 White House Conference on Children and Youth.) 1960.

Discusses fifteen ways in which creativity can emerge, be original and be perceived.

1. Creativity as Produce and as Process.
2. Creativity in the Moment of Now.
3. The Emergence of an Original: A Quality of Protoplasm.
4. Discarding the Irrelevant Past.
5. Creativity as Differentiation and Integration of Differences.
6. Creativity as a Flow of Individual Differences.
7. Creativity as Harmonious Interacting.
8. The Open System as the Ideal Propitious Environment.
9. Range of Activities Included Under Creativity.
10. Example of Environmental Restricting.
11. Domination.
12. Brainwashing.
13. The Meaning of the Unconscious for Creativity.
14. Evaluation of Creativity.
15. Evaluation of Developmental Levels of Creativity.

Anderson, H. H. "Creativity and Education." Association for Higher Education College and University Bulletin 13: 14; May 1, 1961.

Discusses creativity in education when viewed as closed system and as open system. Creativity is seen both as process and product. The process exists only in the moment of Now, the product exists only in the past. Creativity, however, is based on an awareness of the past, a quality of cell structure, a harmonious interaction and a developmental process. "To live creativity is to live truthfully."

Anderson, H. H., and Anderson, Gladys L. "A Study in Creativity and Mental Health." (Presented at the Sixth International Congress on Mental Health, August 31, 1961, Sorbonne, Paris.)

A study of incomplete stories given to series of students in Germany, Mexico, and the U. S. More authoritarianism was reflected in the German and Mexican stories, but also present to lesser degrees in all other locations. Further sampling was obtained from children in England, Norway, Sweden, Finland, Brazil. Anderson Incomplete Stories have now been given to 10,000 children from seven languages in the 4th and 7th grades. Paper deals with the 7th grade children.

Anderson, H. H. "Creativity and Programmed Learning, the Open and Closed Systems of Education." E. Lansing, Michigan: Michigan State College, July 1963.

Discussion of a differentiation between learning from one's own experiences, and the learning from the experiences of others, between creativity and thinking on the one hand and of programmed learning on the other, between the open and closed systems of education.

Education of closed system is mainly a body of knowledge, convergent thinking. Creativity can only be in an open system of education. Discussion of his three postulates of creative education.

1. Creativity occurs in the moment of now.
2. Product of creativity exists only in the past.
3. Creativity, however, is based on an awareness of the past.

Anderson, H. H., editor. Creativity in Childhood and Adolescence: A Variety of Approaches. Palo Alto, California: Science and Behavior Books, Inc., 1965.

Reports of a conference include: "A Psychometric Approach to Creativity" by J. P. Guilford; "Creativity in Gifted Students and Scientists" by B. R. Snyder, and L. W. Heims; "Creative Possibilities for a Consideration of Creativity" by F. J. Hacker; and "On the Meaning of Creativity" by the editor.

Anderson, K. E., editor. Research on the Academically Talented Student. Washington, D. C.: National Education Association Project on the Academically Talented Student, 1961.

A 92-page booklet of 4 chapters and extensive bibliography discusses: (1) assumptions underlying research, (2) illustrative research on individual characteristics, (3) illustrative research on educational practice, (4) status and needs of research. Contains considerable useful material, including lists, agencies, projects and research citations on grouping, acceleration, etc.

Anderson, R. H. "Arousing and Sustaining the Interest of Gifted Children in the Study of Science." Gifted Child Quarterly 5: 35-41; Summer 1961.
A discussion of elementary school methods useful in motivating scientific interest.

Andrews, F. M. "Creativity and the Scientist." Unpublished Ph.D. thesis, University of Michigan, 1962. Dissertation Abstracts 23: 3524; 1963.
A theoretical paper on differences between creative and non-creative scientists.

Andrews, M. F. "A Bibliography on the Nature of Creativity and Aesthetic Form." Syracuse, New York: Syracuse University, (n. d.). (Mimeo.)

Andrews, M. F., editor. Creativity and Psychological Health. Syracuse, New York: Syracuse University Press, 1961.
Symposia proceedings of 148 pages from the 1960-61 Conferences on Creative Arts Education held at Syracuse University. Contributors conceive creativity to be a "positive self-integrating force. . . a process of self-actualization, an expression of being." They present their interpretations of the relationships between creativity and psychological health.

Anonymous. "How to Implement a Modern Mathematics Program." School Management 7: 10: 55-62; October 1963.
The author tells how the schools in the Greater Cleveland area adopted the Greater Cleveland Mathematics Program.

Anonymous. "Natural Sciences and Math: The Gifted Student." Review of Educational Research 34: 308, 358, 370; June 1964.
Several summer programs in math for gifted described. Results indicated students were free from any social or emotional detriment because of accelerated program, and that accelerated students learned math as well as, or better than, their counterparts in regular math classes. Program groups used 20% less study time than conventionally taught groups, same scores.

Appell, H. L. "The Relationship Between Certain Aspects of the Intellectually Superior Students School Record and His Recollection of and Expressed Feelings about that Record." Unpublished Ed.D. thesis, The American University, 1963. Dissertation Abstracts 24: 3196; 1964.

Self concepts of underachievers were investigated. The 4th grade for boys and the 7th grade for girls were critical points. Underachieving boys do not find curriculum meeting their needs, while girls look to the teacher for interpersonal relationships which they do not receive.

Applbaum, M. J. "Should Gifted Students Be Accelerated?" California Journal of Secondary Education 36: 297-300; May 1961a.

Surveyed reactions of over 1,000 Merit winners and their principals re acceleration; 25% of students felt it of considerable value and 36% of moderate value. Principals' percentages were about 10% lower in each category. Concludes that few top high schools practice acceleration and that enrichment is better.

Applbaum, M. J. "A Special Guidance Program for Gifted Underachievers of the Tenth Grade." The Bulletin 45: 20-33; November 1961b. (Cf. pp. 347-61 in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

An account of the guidance program for underachievers at Erasmus High School with suggestions to schools.

Applbaum, M. J. "Special Equipment in Teaching the Gifted." Journal of Educational Research 55: 174-77; December 1961-January 1962.

A survey of 1,000 principals with regard to special material for gifted students found 88% feeling need for such materials but only 7% indicating that they have equipment for extensive use.

Arn, W., and Frierson, E. "An Analysis of Programs for the Gifted." Gifted Child Quarterly 8: 4-8; Spring 1964.

Major emphasis is on procedures contributing to academic growth, next come development of academic skills, third come increased motivation, few practices are designed to aid aesthetic values, social or emotional development.

Arnold, J. E. "Education for Innovation." (pp. 127-38) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962a.

A discussion of the creative individual's aptitudes, interests and some extensions to phrasing of questions and teaching for creativity. Some ingenious examples and figures are offered.

Arnold, J. E. "Useful Creative Techniques." (pp. 251-68) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962b.

Presents a wide variety of techniques for stimulating ideas; clarifies diverse procedures designed to facilitate the creative process.

Aschner, Mary Jane. "The Analysis of Verbal Interaction in the Classroom." Theory and Research in Teaching. Bellock, A. S., editor. New York: Teachers College, Columbia University, Bureau of Publications, 1963. (Cf. "A System for Classifying Thought Processes in the Context of Classroom Verbal Learning." Urbana: University of Illinois, Institute for Research on Exceptional Children, April 1962. [Mimeo.])

Development of a system of classifying student-teacher interactions in terms of a structure of intellect model.

Aschner, Mary Jane. "Intellectual Initiative in the Classroom." School Review, in press.

A discussion of classroom conditions favoring cognitive initiative and development.

Asher, J. J. "Towards a Neo-field Theory of Problem Solving." Journal of General Psychology 68: 3-8; 1963.

A theoretical model is offered which attempts to approximate the process of problem solving and creative thinking. Inter-relationships are suggested between the activities of learning, problem solving and creativity. Reference is made to a 2-year research study, generated by the model, which directly tests and confirms one of the key constructs in the theory.

Astin, A. W. "Personal and Environmental Factors Associated with College Dropouts Among High Aptitude Students." Evanston, Illinois: National Merit Scholarship Corporation, (n. d.).

Environmental factors associated with high aptitude college dropouts: lower socioeconomic background, lower ranks in high school; initially planned to get lower college degrees; apply for relatively few scholarships. Personal factors associated with: impulsivity; assertiveness. Male dropouts are more inclined to check doubts about appropriate course of study, poor academic performance; dissatisfaction with being a student. Female dropouts check: financial responsibility; money.

Astin, A. W., and Holland, J. L. "The Environmental Assessment Technique: A Way to Measure College Environments." Journal of Educational Psychology 52: 308-16; December 1961.

Description of method for measuring the college environment: the Environmental Assessment Technique, Measure of eight characteristics of the student body - size, average intelligence, and six personal orientations were validated against the College Characteristic Index at 36 colleges.

Astin, A. W. "An Empirical Characterization of Higher Educational Institutions." Journal of Educational Psychology 53: 224-35; 1962a.

A factor analysis of 33 institutional variables led to the emergence of five principal dimensions along which higher educational institutions differ:

1. Affluence (wealth).
2. Private vs. public control.
3. Masculinity.
4. Homogeneity.
5. Realistic Orientation.

Astin, A. W. "Influences on the Student's Motivation to Seek Advanced Training: Another Look." Journal of Educational Psychology 53: 303-09; December 1962b.

College press does not affect the student's level of aspiration in the manner of Thistlewaite's 1962 study (Journal of Educational Psychology 53: 53-64). However, on strong a priori grounds, we should expect students to be affected differently by different college environments.

Astin, A. W. "Further Validation of the Environmental Assessment Technique." Journal of Educational Psychology 54: 217-26; 1963a.

Using a larger sampling of institutions, the Environmental Assessment Technique was further tested for validity.

Astin, A. W. "Undergraduate Institutions and the Production of Scientists." Science 141: 334-38; July 26, 1963b.

Discusses the effects of different types of colleges on the motivation of high aptitude students to pursue careers as scientists. It was found that characteristics of the high aptitude students appear to be much more important than characteristics of the college he attends. Both technological institutions and coeducational liberal arts colleges were found to have a positive effect upon the male's choice of science as a career. Females were negatively affected by the affluence of the institution attended.

Astin, A. W. "Differential College Effects on the Motivation of Talented Students to Obtain the Ph.D." Journal of Educational Psychology 54: 63-71; 1963c.

Ph.D. aspiration negatively affected by the size of student body, the percentage of males in the student body, and the Conventional Orientation in the college environment. Social Orientation affected Ph.D. significantly, but relation was complex. Attending a co-educational liberal arts school appears to increase student motivation to seek Ph.D.; Ph.D. aspiration reduced as a function of attending one of N. E. men's colleges.

Astin, A. W. "Socio-economic Factors in the Achievements and Aspirations of the Merit Scholar." Personnel and Guidance Journal 42: 581-86; February 1964a.

Found that Merit scholars excel in the academic, scientific, and literary fields; are more likely to be elected to Student offices; plan graduate study more frequently, showing a distinct preference for the Ph.D.; and show a greater potential for creative achievement. Differences between Scholars and Non-Scholars cannot be attributed to higher socio-economic background of scholar.

Astin, A. W. "Types of Variables for Creativity Research." (pp. 351-55) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964b.

Measures of creativity used by various researchers are viewed as varying along (a) naturalistic vs. manufactured; and (b) degrees of social relevance. Most investigators prefer manufactured variables of low social relevance (tests). The relationship between the type of variable and the methodology (experimental vs. correlational) is discussed.

Astin, A. W. "Effects of Different College Environments on the Vocational Choices of High Aptitude Students." Evanston, Illinois: National Merit Scholarship Corporation, 1964c. (Mimeo.) (Journal Counseling Psychology, in press.)

Colleges have an effect since students tend to grow more like their environment, nevertheless, the students career choice is affected far more by what he brings to college than by what he finds there.

Ausubel, D. P. "Creativity General Creative Abilities and the Creative Individual." Psychology in the Schools 1: 344-47, October 1964.

A somewhat general discussion of some of the issues in creativity training which puts emphasis on the genetic aspect.

Bachelis, L. Body-Field Perceptual Differentiation as a Variable in Creative Thinking. Unpublished doctoral thesis, New York: Yeshiva University, in process, 1963.

Bailey, E. R. A Theory of Creative Human Relations: Implications for Educational Administration. University Microfilms, Inc., 62-1636.

Baker, M. G. "Motivation for the Release of Creativity through Creative Writing." Unpublished Ed.D. thesis, Muncie, Ind.: Ball State Teachers College, 1963. Dissertation Abstracts 24: 4578; 1964.

Children wrote stories in response to six different types of stimuli. Ten findings given, few statistically significant.

Baker, S. S. Your Key to Creative Thinking. New York: Harper & Row, Publishers, 1962.

Baldwin, J. W. "Teacher Judged Giftedness and Group Intelligence Tests, Kindergarten." Gifted Child Quarterly 6: 153-60; Winter 1962.

Accuracy of 1st teacher judgment was 26%, of 2nd, 38%, and of group test 39%.

Ball, Ruby. The Nature of Creativity. Unpublished doctoral thesis, University Park: Pennsylvania State University, in process, 1963.

Barbe, W. B. "Study of a Gifted Family." Education 79: 45-48; 1958. (Cf. Psychological Abstracts 34: 976; February 1960.)

Presents case study of gifted family; brings out contrasting aspects.

Barbe, W. B. "Chattanooga's Program for Talented Youth." Exceptional Children 27: 350-52; March 1961.

Account of a community project sponsored by Junior League which set up special work in mathematics, science, microbiology, creative writing, senior problems, and language.

Barbe, W. B., and Frierson, E. C. "Teaching the Gifted, A New Frame of Reference." Education 82: 465-67; April 1962.

A description of process-oriented teaching for the gifted which includes emphasis on learning pattern (process), learner-participant teacher, learning direction determined by student for himself, content-bounds evolve from students resources and teacher evaluated and evaluates students process on their involvement in the learning.

Barbe, W. B. The Exceptional Child. New York: Center for Applied Research in Education, (70 5th Avenue), 1963a.

Booklet of 109 pages contains chapter on the above-average child, covering bright, gifted and very gifted children.

Barbe, W. B. As if the Chart Were Given. Columbus, Ohio: Ohio State Department of Education, Division of Special Education, 1963b.

A booklet of 40 pages on a demonstration project for gifted county elementary school children. Contains 5 chapters: introduction, identification, teaching, research, summary.

Barbe, W. B., and Chambers, N. S. "Career Requirements of Gifted Elementary Children and Their Parents." Vocational Guidance Quarterly 11: 137-39; Winter 1963c.

156 gifted elementary school children and 263 parents ranked "how a job or career would have to satisfy each of 10 requirements before considered 'ideal.'" The study compared only the responses of parents and responses of children: Over 50% of parents selected: "Provide opportunity to use my special abilities or aptitudes as most important requirement for job"; about half of remaining parents chose: "allow me to look forward to a stable, secure future"; about 13% "allow me to be helpful to others." The largest number of gifted children (37%) chose: "an opportunity to help others" as most important; 21% selected: "stable, secure future," 15% chose: "opportunity to use my special abilities or aptitudes"; 10% wanted a "chance to earn a great deal of money."

Barbe, W. B., and Chambers, N. S. "Adjustment of Gifted Children in Special Classes." Gifted Child Quarterly 8: 32-35; Spring 1964a. (Cf. The School Counselor, March 1964.)

Discusses the Portage, Ohio program, and suggests that achievement tests (which found no differences) are a poor way of evaluating differential success of grouped gifted children because of ceiling problems.

The School Counselor article discusses where gifted children find friends.

Barbe, W. B. One in a Thousand. Columbus, Ohio: Ohio State Department of Education, 1964b.

A 78-page study of moderately and highly gifted children examined for family backgrounds, educational development, social adjustment, etc.

Barney, W. D. Early Admission to School for Mentally Advanced Children. Pittsburg: University of Pittsburg, Department of Special Education, 1963.

A project on early admission together with a search of related literature.

Barnum, W. "Music for the Talented: A Program in Action." Music Educators Journal 47: 5: 37-40; April-May 1961.

Report on program of Shoreline School District, near Seattle, Washington. Specific examples illustrate how music is brought to the academically talented student who is outside the music department, and how an academically talented student who is also gifted in music may be given time to explore many sides of his music talent and to develop into a versatile musician.

Flexible programming includes double periods, extra periods, two teachers for large groups, two subjects alternating in one period, and team teaching.

Barron, F. "Complexity-Simplicity as a Personality Dimension." Journal of Abnormal Social Psychology 48: 163-72; 1953.

Complexity is related to personal tempo, verbal fluency, impulsiveness, expansiveness, originality, good taste, artistic expression, aesthetic interest, and independence of judgement.

Barron, F. "Originality in Relation to Personality and Intellect." Journal of Personnel 25: 730-42; 1957.

"The creative genius is at once naive and knowledgeable, being at home equally with primitive symbolism and rigorous logic. He is both more primitive and more cultured, more destructive and more constructive, occasionally crazier and yet adamantly saner than the average." He can "regress in the service of the ego."

Barron, F. "Creativity: What Research Says About It." NEA Journal 50: 3: 17-19; March 1961.

A rather popular account of research on creativity. (Part of a symposium which includes: [1] creativity in the elementary classroom by Strang; [2] creativity in the science classroom by Jones; and [3] creativity in a summer arts center by Haney.)

Barron, F. "The Psychology of Imagination." (pp. 227-37) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962. (Cf. Scientific American, September 1958.)

A discussion of the function of creativity in artists.

Barron, F. "Discovering the Creative Personality." College Admissions 10: The Behavioral Sciences and Education. Proceedings of the 10th Annual Colloquium on College Admissions of the College Entrance Examination Board, New York, 1963a.

Recounts the development of the Welsh-Barron-Heist Complexity Scale, first devised for artists, which appears to measure preference for complexity found in creative persons. Scale items given.

Barron, F. "Creative Vision and Expression." (pp. 285-305) in New Insights and the Curriculum. 1963 Yearbook. (Edited by A. Frazier.) Washington, D. C.: Association for Supervision and Curriculum Development, a department of the National Education Association, 1963b.

Excerpts from Barron's book: In summary the creative person is more comfortable with disorder, and more challenged to find a subtle way or reordering. He is also more independent in judgment. They are more troubled about the world and have more resources for dealing with their troubles. Last creative writers and artists are moved by an intense commitment that impels them to seek for new forms of artistic vision.

Barron, F. "Diffusion, Integration and Enduring Attention in the Creative Process." From The Study of Lives. Englewood Cliffs, New Jersey: Prentice-Hall, 1963c.

A general discussion of psychology, psychoanalysis, curiosity, and memory. A discussion of self and not-self, masculine and feminine.

Concluding discussion between opposing tendency for structuring and integration and tendency towards disruption of structure and diffusion of energy and attention.

Barron, F. Creativity and Psychological Health. Princeton, New Jersey: D. Van Nostrand Co., Inc., 1963d.

Book of 292 pages includes analyses of the predictive qualities of the Wechsler-Bellevue Intelligence Test, the MMPI, Rohrschach, and the Ethnocentrism Scale in differentiating between the improved and unimproved cases as a result of psychotherapy. Also, describes the development of the Ego Strength Scale derived from the MMPI.

The relationship between artistic creativity and religious belief, transcendental experience, and personal wellsprings of creativity are also examined in a volume which combines theory and research.

Barron, F. "The Disposition Toward Originality." (pp. 139-52) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963e.

Discusses characteristics of creative people; their tolerance of unstructuredness, scores on personality tests and other facts. (Also in Gowan, 1961.)

Barron, F. "The Needs for Order and for Disorder as Motives in Creative Activity." (pp. 153-62) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963f.

Creative people are more observant, they point to the unrecognized, they see and value things as others do not. Their world is more complex, they are healthier and have more available energy. They are more open to impulse and fantasy. They can "regress in the service of the ego."

Barron, F. "The Relationship of Ego Diffusion to Creative Perception." (pp. 80-86) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

An account of an experiment of "regression in the service of the ego" induced by psilocybin with resultant euphoria.

Barwick, Janice. "A Study of the Relationship Between Parental Acceptance and the Academic Achievement of Adolescents." Ed. D. thesis, Boston, Mass.: Boston University, 1960. Dissertation Abstracts 21: 3698-99; 1961.

1. Boys achieving at a higher level reported more accepting fathers, but mothers were perceived as least accepting by the high-achieving boys.
2. Mothers and fathers acceptance of girls increased as achievement, but mother acceptance was always perceived as greater than father acceptance.
3. Parental self reports of acceptance did not agree with children's perceptions.

Batarsch, G. J., and Soar, R. S. "A Factor Analysis of Creativity and Personality Measures." Columbia, S. C.: University of South Carolina, 1964. (Mimeo.)

Results for 4th grade children identified two factors: creativity, and school-coping ability.

Bates, C. O. "A Study of Creativity Potential as Found in Elementary Student Teachers." Unpublished Ed. D. thesis, Muncie, Ind.: Ball State Teachers College, 1963. Dissertation Abstracts 24: 4561; 1964.

High creatives exceeded lows on MMPI M-F, Purdue Placement Test in English, need for precision and self reliance, total score on SCAT, writing, history, and social studies scores on the STEP, high school rank and college GPA. No difference found on SVIB or MTAI.

Baughman, M. D. "Providing Thrust for Talented Junior High School Youth." Bulletin of the National Association of Secondary-School Principals 42: 125-33; November 1958.

Summaries of six group discussions on different phases of educating the gifted provide a rather complete overview of this question and also furnish an adaptable outline for those planning a program for these children.

Baxter, J., and Jones, R. "Reactions of a University Faculty to a Program for Superior Students." Gifted Child Quarterly 6: 150-53; Winter 1962.

A report of faculty reaction to early entrance students under the program of the Fund for the Advancement of Education (Ford), found 39 of 69 faculty members endorsing the program.

Beaird, J. H. "Dimensions of Creativity in Elementary School Children." Monmouth, Illinois: Monmouth College, 1965? (Mimeo.)

Projected Coop. Research report due June, 1965 investigated differences between high and low anxiety 6th graders on Guilford tests.

Beals, L., and Simmons, Patricia. "Counseling Needs of Gifted High School Students." (pp. 182-87) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., 1963. (Cf. Personnel and Guidance Journal 40: 712-17; April 1962.)

An NDEA study of 310 gifted students in Orange County schools. About 30% were doing less than B work, girls earning higher GPA than boys. Interviews and home questionnaires supplied other statistics and brought out need for more guidance.

Beberman, M. An Emerging Program of Secondary School Mathematics. Cambridge, Massachusetts: Harvard University Press, 1958.

In this report of the Inglis lecture, which guided the development of the University of Illinois Committee on School Mathematics, the author emphasizes the following:

1. The need for more precision in mathematical language--for example, the distinction between "numeral" and "number."
2. The "discovery method" of teaching mathematics.

Becker, L. J. "An Analyses of the Science and Mathematics Achievement of Gifted Sixth Grade Children Enrolled in Segregated, Partially Segregated, and Non Segregated Classes." Unpublished Ed.D. thesis, Syracuse, New York: Syracuse University, 1963. Dissertation Abstracts 24: 1446; 1964.

Gifted children did not achieve more in science and mathematics when placed in special groups.

Beittel, K. R., and Burkhart, R. C. "Strategies of Divergent, Spontaneous and Academic Art Students." Studies in Art Education 5: 20-29; Fall 1963.

Article describes distinctions between (1) divergent, discovery oriented; (2) spontaneous, problem finding; and (3) academic, types of students and their strategies, analyzing how these strategies manifest themselves in art production, how they are based on clear differences in students' personality structures and problem-solving, as well as discovery and evaluative powers. The entire evidence of the article indicates that discovery is singular and distinct from problem-solving, not only as a strategy but also as an end in itself. This points to a huge gap in our educational methods which are oriented toward problem-solving. A new educational methodology must be constructed which deals with discovery as a way of learning.

Beittel, K. R. "Creativity in the Visual Arts in Higher Education: Criteria, Predictors, Experimentation, and their Interactions." (pp. 379-95) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

Lowenfeld associate discusses on-going work at Pennsylvania State University.

Bell, A. A. "The Relationship Between Certain Non-Intellectual Factors and Scholastic Achievement in Male College Preparatory High School Senior Students." Unpublished Ed.D. thesis, Philadelphia, Pa.: Temple University, 1963. Dissertation Abstracts 25: 995; 1964.

Found significant differences between overachievers, achievers, underachievers in personality, aspirations, social behavior and relation to counseling.

Bellak, L. "Creativity: Some Random Notes to a Systematic Consideration." Journal of Projective Technology 22: 363-80; 1958.

Overview of six major variables:

1. The product of creativity.
2. The creative process.
3. The creative personality.
4. The creative experience.
5. Role-playing of the creative person.
6. The relation of psychotherapy to creativity.

One particular view is stressed in the article, the ego-psychological approach that the author feels is a relatively neglected area which offers special promise. In considering the creative process the author observes that the relationship between regression and adaptation should be a good measure of a potentially creative, inventive, flexible mind. He does not feel that we have better projective techniques for this purpose at present.

Benson, Dolores. The Relative Effectiveness of Indirect or Direct Methods of Teaching High Level Students in the Ninth Grade as Measured by Vocabulary Growth. Unpublished doctoral thesis, Pullman, Washington: Washington State University, in process, 1963.

Benton, Mildred. "Creativity in Research and Invention in the Physical Sciences: An Annotated Bibliography." United States Naval Research Laboratory Report, Bibliography No. 19, 1961.

A bibliography of around 1,500 entries recording information obtained from a review of biographical material of creative, individuals, results of research on thinking and problem-solving, tests and measurements, proceedings of conferences seeking an insight into creativity, and articles and books. Entries were selected because of their application to the research environment.

Bereday, G. Z., and Lawerys, J. A., editors. The Yearbook of Education, 1961: Concepts of Excellence in Education. London: Evans Brothers Ltd., 1961.

A 500-page broad summary of education of gifted children round the world with 40 contributors. U. S. writers include Bereday, Bish, Flieger, Martinson, Williams, and Witty. The first section is devoted to theory, the last two to programs. The volume while comprehensive suffers from width of focus and diffusion of aim.

Bereiter, C. "Verbal and Ideational Fluency in Superior Tenth Grade Students." Journal of Educational Psychology 51: 337-45; December 1960.

A battery of 18 tests for verbal fluency and figural and mechanical fluency were administered to boys and girls in the 10th grade. Different patterns were obtained for the two sexes--a general factor emerged for boys.

Berman, Louise M. Creativity in Education. Madison: University of Wisconsin, School of Education, 1964.

Bernstein, A. L. "Whither the Gifted Child?" Phi Delta Kappan 40: 99-101; November 1958.

Sees overemphasis on science as being harmful to the general welfare as far as the gifted are concerned.

Berry, Carla Friedman. Underachievement: An Over-Determined Symptom Related to Character Structure. Unpublished doctoral thesis, Cambridge, Massachusetts: Harvard University, 1963.

Bettelheim, B. "Segregation: New Style." School Review 66: 251-72; September 1958.

An argument against the idea of giving special attention to gifted children. The author disagrees with most of the plans for educating the gifted. His presentation would be considered heresy in many circles.

Biber, B. "Premature Structuring as a Deterrent to Creativity." American Journal of Orthopsychiatry 29: 280-90; 1959.

The teacher's opportunity to support the creative potential of children is not just a function of his own creativeness, but is restricted by the tradition of imposing a structure of subject dominated, logical-objective over the intuitive-subjective feelings of the learning child so early in the course of his emerging awareness of his world that except for unusual individuals his awareness is inhibited, or at least diminished. The problem is how skillful teachers can place curricular offerings within the developmental sequence which stretches between the phase of exposure and mastery and how relaxed, imaginative and generous they can be in finding the exposure phase. A very good article.

Bidna, D. B. Social Studies Programs for Academically Talented High School Students. Ed. D. thesis, Los Angeles: University of Southern California, 1961.

Surveys practices in 140 high schools nationwide and uses panel of 25 jurors to determine gap between actual and desirable practices. Ability grouping and special classes were found in 75% of cases. A favorite device was a special history class in the 11th grade. In general there was close agreement between theory and practice. A three-year sequence of social studies is among recommendations.

Bilt, S. R. Measuring Attitudes of High School Seniors Towards Science and Scientists. Ed.D. thesis, New Brunswick, New Jersey: Rutgers University, 1951. Dissertation Abstracts 20: 3625; 1960.

This study finds students valuing science (in contradiction to other studies).

Birch, J., and Reynolds, M. C. "The Gifted." Review of Education Research 33: 83; January 1963.

Covers three-year period since 1959. Reports on characteristics, creativity, underachievement, grouping, acceleration, curriculum and needed research. 100 citations.

Birney, R. C., and Houston, J. P. "The Effects of Creativity, Norm Distance and Instructions on Social Influence." Journal of Personnel 29: 294-302; 1961.

Subjects higher creativity yielded least to peer disagreement on value of painting.

Bish, C. E. "The Academically Talented." National Education Association Journal 50: 33-37; February 1961.

Discusses characteristics, identification, motivation; describes ways of providing better programs and reasons therefore.

Bish, C. E. "What are the Advantages and Disadvantages of Acceleration?" (pp. 95-98) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., 1963a.

Lists advantages and disadvantages and concludes former outweigh latter.

Bish, C. E. "What is the Extent of the Problem?" (pp. 14-16) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., 1963b.

Avers there are 2 million gifted children in the USA, and discusses aims and programs for them.

Bish, C. E. "Underachievement of Gifted Students." (pp. 226-29) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., 1963c.

An early review of the Nason; the Kurtz; and the Swenson studies in underachievement.

Bish, C. E., editor. Productive Thinking in Education. Washington, D. C.: National Education Association, 1965?

Projected volume of transcripts of papers given by Guilford, Taylor, Torrance, and others at 1963 Invitational Conference on Productive Thinking sponsored by Project for Academically Talented Student.

Bish, Gertrude. A Study of the Relationships of Intelligence, Achievement, Creativity, Anxiety, and Confidence Among Intermediate Grade Pupils in a Suburban Area Elementary School. Unpublished Ed.D. thesis, Washington, D. C.: George Washington University, 1964.

Among findings were low positive correlations between verbal creativity and intelligence, none between nonverbal creativity and intelligence, substantial correlations between verbal creativity and achievement which increased when intelligence was partialled out. Anxiety and confidence were negatively correlated, but anxiety did not inhibit performance on the creativity tests for most children.

Bishop, W. "Community Action by a Gifted Group." Gifted Child Quarterly 8: 39-45; Spring 1964.

Describes project of gifted students in winning bond issue.

Bixler, H. H., editor. Providing for the Bright and Gifted: A Manual for Administrators. Cullowhee: Western Carolina College Guidance Clinic, 1961.

Booklet of 106 pages describes administration for able.

Bixler, H. H. The Cullowhee Story. Cullowhee: Western Carolina College Guidance Clinic, 1962.

Booklet of 111 pages describes efforts at Cullowhee for gifted children, principally the summer camp program.

Blishen, E. "Non-Streaming in the Secondary School." Forum 7: 1: 21-24; Autumn 1964. (University of Leicester, United Kingdom.)

The case for doing away with ability groupings in the English modern comprehensive secondary schools as presented to the Plowden Committee.

Bloom, B. S. "Report on Creativity Research by the Examiner's Office of the University of Chicago." (pp. 251-64) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

Discusses several University of Chicago studies on creativity of scientists and Ph.D. candidates followed by three proposals for research: (1) a descriptive rating scale; (2) problem solving tests; and (3) assessment of creative doctoral candidates.

Blosser, G. H. "Group Intelligence Tests as Screening Devices in Locating Gifted and Superior Students in the Ninth Grade." Journal of Exceptional Children 29: 282-87; February 1963.

Pegnato type article discusses efficiency and effectiveness of various group screens.

Blumenthal, H. J. "A Summer Microbiology Institute for Gifted High School Students." The Superior Student 5: 3: 22; February 1963.
Describes a program at Interlochen, Michigan.

Boehm, C. K. "Teaching Personnel and Gifted Learners." (pp. 283-88) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., 1963.
Discusses the role of the administrator, the faculty, and guidance for the able.

Boesen, M. H. A Descriptive Study of Selected Aspects of Human Creativity. Unpublished doctoral thesis, Laramie: University of Wyoming, in process, 1963.

Bonsall, Marcella. "Introspections of Gifted Children." California Journal of Educational Research 11: 159; September 1960.
Responses of gifted adolescents concerning parental, peer, and social concerns; vocational, religious, and intellectual plans; and physical and temperamental characteristics.

Bonsall, Marcella, consultant. Gifted: Special Class. (kinescope film from Learning '63, No. 21012), Los Angeles County Schools, (28 min.), 1963.
A multi-grade class of educationally deprived gifted children describe some of their projects.

Bonsall, Marcella, consultant. Gifted: Analytical Thinking. (kinescope film from Learning '64, No. 21016), Los Angeles County Schools, (28 min.), 1964a.
Two teachers use the discussion method with a small group of gifted 6th graders to demonstrate how analytical and evaluative thinking processes may develop.

Bonsall, Marcella, consultant. Productive Thinking. (film No. 21018, Institute 178), Los Angeles County Schools, (28 min.), 1964b.
Dr. Gallagher explains and demonstrates with gifted elementary school children a teaching technique for stimulating creative processes.

Bonsall, Marcella, and Meeker, Mary. "Structure of Intellect Components in the Stanford Binet Form L-M." Los Angeles County Superintendent of Schools, Division of Research and Guidance (155 West Washington Street, Los Angeles 15), Fall 1964. (Mimeo.)
Booklet contains: (1) theoretical model for the structure of intellect; (2) definitions of operations, contents, and products in the model; (3) descriptions of factors; (4) pupil profile and score sheets for SOI components on the S-B LM; and (5) design for assigning SAT items to SOI components. Much practical information.

Bovee, O. H. "The Evolution of a Program for the Gifted." Clearing House 38: 412-16; March 1964.
A description of the Loma Linda Junior High School program involving enrichment and special classes.

Bowman, Inez. "The Gifted Child in the Italian Schools." Gifted Child Quarterly 5: 5-6; Spring 1961.

An account of the rather sparse program for the gifted in Italian schools.

Bradley, H. L. An Analysis of the Relationship Between Group Counseling and Academic Achievement in Predicted Low Achievers. Unpublished doctoral thesis, Pullman: Washington State University, in process, 1963.

Bradley, R. W. "A New Road to Creativity." Product Engineering, October 1, 1962. (Cf. Creativity Review 5: 1: 7-9; 1963.)

A discussion of the advantages of hypnosis and similar medical intervention in gaining access to the more primitive and creative substratum of the mind.

Bradway, Katherine, and Robinson, Nancy. "Significant IQ Changes in Twenty-Five Years." Journal of Educational Psychology 52: 74-79; April 1961.

In 1956 the S-B form L was given 110 adults whose IQ had increased or decreased significantly between two testings in 1931 and 1951. Regression occurred in each group but was small. Subjects whose IQ had increased showed more reversal than those whose IQ had decreased. Changes in position in IQ distribution for young children are related to home background; this is not true of adolescents.

Bradway, Katherine, and Thompson, Clare. "Intelligence at Adulthood: A Twenty-Five-Year Follow-Up." Journal of Educational Psychology 53: 1-14; 1962. Also (pp. 65-79) in Ripple, R. E. Readings in Learning and Human Abilities. New York: Harper & Row, Publishers, 1964.

Longitudinal study involving 111 Terman subjects finds some stability but interesting differences. Vocabulary and abstract reasoning tends to increase, whereas memory and practical reasoning do not. The mental age of college graduates shows gains over those who did not graduate. Correlations of adolescent IQ with adult are of order of .8. Males show more IQ gain than females, the average gain being 20 months of mental age over what would be expected if mental growth ceased at 16. Adult intelligence is complex and cannot be expressed by a single index.

Brayfield, R. R. A Study of Creative Behavior as a Risk Taking Process. San Luis Obispo, California (2156 Luna Way), 1964.

Design for a doctoral thesis which attempts to dichotomize 7th grade boys for creativity and then test them on n-achievement and other aspects of risk-taking.

Brecher, Ruth, and E. "Creative Ability--What is it? Who has it? What Makes it Flourish?" Parents Magazine; November 1960.

Deplores fact that the older children grow and the longer they are exposed to our care and education, the less creative and original most become. Poses the question: What can we, as teachers and parents, do to keep creativity alive while they are: (1) learning to behave by "our" standards; (2) playing their proper role in a group; (3) learning the facts and skills they need; (4) being judged, disciplined, and jointly approved by teachers and parents. Proposes six ways to increase creativity.

Brittain, W. L., and Beittel, K. R. "A Study of Some Tests of Creativity in Relationship to Performances in the Visual Arts." Studies in Art Education 2: 54-65; 1961. (Cf. idem 2: 36-44; 1961.)

A comparison of the Minnesota Tests of Creativity with some others.

Brittain, W. L., editor. Creativity and Art Education. Washington, D.C.: National Art Education Association, 1964.

Britton, R. Experimental Study of Effect of Use of Certain Materials on Creativity of Pupils. Unpublished doctoral thesis, Charlottesville: University of Virginia, in process, 1963.

Brossard, C. "The Creative Child." Look Magazine; November 7, 1961.

What makes him different? How he is discriminated against? How he is overlooked? What often becomes of him? Suggestions for utilizing his mind, are the questions posed. Conclusions of various research psychologists are cited on the characteristics of the creative child and methods by which parents and schools can further creativity are highlighted.

Brown, G. "A Second Study in the Teaching of Creativity." Harvard Educational Review 34: Winter 1964. (Cf. School Review [in press] for first study.)

Posits that a personality structure (called the "subself") can be crystalized around a "symbol" which can then be utilized to "trigger" the operation of the subself. Presents the results of research which suggest that subjects trained in this way will respond on tests in more or less "creative" ways depending on whether a "creativity symbol" or "non-creativity symbol" is used. Suggests that this approach "holds promise of significant behavioral change without the necessity for emphasis on total personality. . . ."

Brown, Sara M. A Study of Variables Associated with "Overachievement" and "Underachievement". Unpublished doctoral thesis, Philadelphia: University of Pennsylvania, in process, 1963.

Brown, W. H. "The Parent Faces the Gifted Child." Bulletin of the National Association of Secondary-School Principals 45: 68-72; November 1961.

Parents questions in parent-teacher conferences are: (1) What evidence of child's ability? (2) What special program? (3) How will it differ? (4) Will it mean extra work? (5) Will he be as well-prepared for college? (6) How will he be marked? (7) What attitude should we show? (8) What special things should we do? (9) Are there plans for college? (10) What additional information re college is available?

Bruner, J. S., Tajfel, H. "Cognitive Risk and Environmental Change." Journal of Abnormal and Social Psychology 62: 231-41; March 1961.

Narrow categorizers are more intelligent than broad categorizers, but shift in categorizing in face of stimulus change is found related to breadth of categorizing but not to intelligence. Narrow categorizers prefer the risk of reacting and being wrong, but broad prefer the risk of not reacting and being wrong.

Bruner, J. S. "The Conditions of Creativity." (pp. 1-30) in Gruber, H. E., and others. Contemporary Approaches to Creative Thinking. New York: Atherton Press, 1963.

A "think piece" which proposes that the creative act is "effective surprise"--the production of novelty. Some of the fusing of opposites inherent in such fusion are discussed and illustrated by reference to a creative group.

Brust, N. "Readiness for the Creative Explorations in a Public School Setting." (pp. 220-24) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

An account of efforts at Downers Grove, Illinois to help induce creative thinking in school children by the intuitive understanding of un verbalized concepts.

Bryan, J. N., director. "The School Provides for Superior Students." News Notes and Nuggets 3: No. 2; November 1960. Newsletter of the Project on Guidance and Motivation of Superior and Talented Students. (259 R. Erie Street, Chicago 11, Illinois.)

Fifty-seven-page pamphlet contains papers from five conferences of the STS, covering four areas of concern: administrative provisions, inservice training, grading, and public relations. Because the authors have had practical experiences in such a program the booklet contains much of great practical value.

Bryan, J. N. Building a Program for Superior and Talented Students. Chicago, Illinois: North Central Association of Colleges and Secondary-Schools (5454 South Shore Drive, 60615), 1963a.

Booklet describes guidance and motivation of talented high school students.

Bryan, J. N. "Talent and Today's Schools." The Superior Student 6: 1: 3-10; December 1963b.

A general overview of programs, plans, and provisions for talented youth on a national level by U. S. Office of Education specialist.

Buel, W. D. "The Validity of Behavioral Rating Scale Items for the Assessment of Individual Creativity." Journal of Applied Psychology 44: 407-12; 1960.

Approach to creativity measurement through behavioral rating scale technique.

Buel, W. D. "Assessment of Creativity in a Research Setting." Journal of Applied Psychology 45: 353-58; 1961.

A number of personality instruments including the Allport and Kuder were used on the research personnel of the Quaker Oats Company. The adaptability test, the KPR literary scale and a forced choiced instrument correlated with the creativity criterion.

Buffie, E. G. A. A Comparison of Mental Health and Academic Achievement: the Nongraded School vs. the Graded School. University Microfilms, Inc., 63-2587.

Buhler, E. O., and Guirl, E. N. "The More Able Student Described and Rated." Vocational Guidance Quarterly 8: 217-19; Summer 1960.
A 13-item check list described.

Burchard, E. M. L. "The Use of Projective Techniques in the Analysis of Creativity." Journal of Projective Techniques 16: 412-27; 1952.

Article attempts to (1) arouse in the reader dissatisfaction with how little we know about creativity; (2) outline the contemporary psychoanalytical theories of creativity; (3) summarize those studies of artistic creativeness in which projective techniques have been utilized; and (4) relate projective techniques to certain hypotheses about the nature of creativity. Avenues for furthering research are discussed.

Burgart, H. J. Art in Higher Education: the Relationship of Art Experience to Personality, General Creativity, and Aesthetic Performance. Unpublished doctoral thesis, University Park: Pennsylvania State University, 1961.

Burket, Carmen. "Creativity in Children and Progress in Therapy." Smith College Studies in Social Work 32: 192-209; 1963.

No differences on scores in creativity tests were found between a normal and equated emotionally disturbed group of children undergoing therapy. Among the latter, those who profited most from therapy scored best on these tests.

Burkhart, R. C. "The Interrelationship of Separate Criteria for Creativity in Art and Student Teaching to Four Personality Factors." Studies in Art Education 3: 18-38; Fall 1961.

Problem posed is to identify the attributes of creative behavior and personality structure in art and student teaching. In the art area, criteria was determined by a judgment of the art products' "spontaneity" or "deliberateness"; in the teaching area, by an objective count of the "divergency" or "convergency" of the student-teachers' questions to the pupils. Concluded by determining four attributes of creativity in personality structure that are applicable to both creativity in teaching and in art, as well as the fact that both are significantly related to the same Creativity-Personality Dimensions. The differences are between divergent and relative values, and factual and absolute values in that a pronounced lack of creativity is the correlate of the latter, while creativity is related to the former.

Burkhart, R. C., and others. "The Effect of a Depth Versus a Breadth Method of Art Instruction at the Ninth Grade Level." Studies in Art Education 3: 75-87; Fall 1961. (Cf. idem 2: 1960; also 2: 14-35; 1961.)

Two teaching methods were used in this experiment, the "breadth" and "depth" approach to art instruction. The "breadth" method, according to the authors, is obviously the more popular and certainly the more widely used of the two. The study showed, however, that the less popular "depth" method produced the greatest gain in individual student progress over a one-year period. It is suggested that it may be well to begin earlier with boys and girls in engaging in sustained long-term projects of "depth" and with less yielding to their restless demands for variety.

Burkhart, R. C. Spontaneous and Deliberate Ways of Learning. Scranton, Pa.: International Textbook Co., 1962.

Includes characteristics of spontaneous and deliberate types of learners based on Lowenfeld's theory of creativity.

Burnett, O. W. "Studies of the Superior Student in College." Working with Superior Students: Theories and Practices. (Edited by B. Shertzer.) Chicago: Science Research Associates, 1960. p. 77-86.

Reports eight Ohio State studies on motivation and study habits of superior college students.

Burt, C. "The Gifted Child." British Journal of Statistical Psychology 14: 123-39; 1961.

Examined are "certain arguments recently advanced to show that the range of individual differences due to genetic selection is too slight to be of practical importance, and in particular that the abilities of gifted individuals are the result of their early environmental opportunities rather than of their genetic constitution. In reply two new pieces of evidence are brought forward: (1) data demonstrating the wide range of variation to be found among children reared under very similar conditions; (2) after-histories of persons of high ability whose environment offered an impediment rather than an aid to their intellectual development. Suggestions are put forward for improving methods of selection of gifted children of high ability."

Burt, C. "Is Intelligence Distributed Normally?" British Journal of Statistical Psychology 16: 175-90; 1963.

"Frequency distributions obtained on applying intelligence tests to large samples of the school population are analyzed, and compared with those given by the formulae for the commoner types of frequency curve. It is noted that the distributions actually observed are more asymmetrical and have longer tails than that described by the normal curve. The best fit is given by a curve of Type IV: this is in fact the type of distribution we should expect if (as has been argued in earlier papers) individual differences in general ability are determined partly by multifactorial and partly by unifactorial inheritance. It follows that the usual assumption of normality leads to a gross underestimate of the number of highly gifted individuals. The conclusions thus drawn are confirmed by a study of data from other sources; and various practical corollaries are deduced." 19 references.

Burton, W. H., and Heffernan, Helen. Creativity: The Step Beyond. Washington, D. C.: National Education Association, 1964.

Booklet of 30 pages for teachers, discusses stimulation of creativity, theoretical considerations, levels and phases of the creative process.

Bush, G. P., and Hattery, L. H. "Teamwork and Creativity in Research." Administrative Science Quarterly 1: 361-73; 1956.

Increasing magnitude and complexity are seen by the authors as posing major difficulties for the administration of scientific and technological endeavors. They suggest more emphasis in (1) investigation of research organization and, especially, the individual engaged in research, (2) training in research administration from the bench scientist to the top administrator, and (3) effective communication throughout the hierarchical form, which is most conducive to research creativity. Reviewed is the concept of research teamwork. Emphasis is placed on interdisciplinary research, the importance of teamwork, and intercommunication, which "results in an exchange and a whetting of ideas that can result in creative advances which no single person or group working by themselves could have achieved."

Butcher, J., and Gorsuch, R. "Predicting Academic Achievement in Junior High School and High School." Champaign, Illinois: Institute for Personality and Ability Testing (1602 Coronado Drive). Information Bulletin No. 4; 1960.

"A student is more likely to do better in school as he has more general intelligence, conscientious persistence, self-sufficiency, will-control, and is less sensitive and domineering."

Bynum, Ruth E. "The School Library and the Accelerated Curriculum." School and Community 45: 16-17; April 1959.

Related how a school library solved the problems that arose when a new program for the gifted was begun. Various ways are given for meeting the increased demand for hard-to-get books.

Camp, L. T. "Purposeful Preschool Education." Gifted Child Quarterly 7: 106-20; Autumn 1963.

Introduces symposium of several articles on preschool education of young gifted children.

Campbell, D. T. "Blind Variation and Selective Retention in Creative Thought as in Other Knowledge Processes." Psychological Review 67: 380-400; 1960.

An effort to root out the belief in the possibility of direct or insightful creative process with about 80 citations.

Carasso, Roberta. "Identifying the Artistically Gifted Child." Gifted Child Quarterly 8: 74-80; 1964.

Discusses some of the problems of identification in this area, 27 citations. Article is part of a symposium issue.

Carlson, Evelyn. "Current Trends in Educating the Gifter." Gifted Child Quarterly 6: 100-05; Autumn 1962.

General article by Chicago superintendent emphasizes need for multidimensional and early identification of gifted, for elementary guidance of pupils and parents and for a larger attention to individual differences.

Carlson, Ruth K. "Emergence of Creative Personality." Childhood Education 36: 402-04; 1960.

Suggestions to teachers on helping children become more creative.

Carlson, Ruth K. "Recent Research in Originality." Elementary English 40: 583-89; October 1963.

Originality is defined by the author as a factor of creativity, which is novel or unusual, existing with statistical infrequency in a particular sample. Study selected 217 subjects (120 girls and 97 boys) from the 4th, 5th, and 6th grades of 10 schools in 6 cities in Contra Costa County, California. 4,500 stories, written by children in the intermediate grades, were collected and used as source materials for originality scales and as data for comparison of two teaching methods: (1) General Impression Originality Scale; (2) Analytical Originality Scale. Original thinking, occurring in 1,400 written products submitted by children and personal opinions of teachers participating in this original writing experience gave evidence that pupils might become more original if their social environment, including teachers and peers, could foster diversity and individuality in thought.

Carmena, Sister M. "Creativity in Education." Catholic Educational Review 60: 249-56; 1962.

The author first points up that: "Creativeness in man arises from a fusion of knowledge, emotion, and tension which wells up from an inner, vital principle and enables or rather, drives man to seek outward expression of what his intellect has grasped and delights in." She sees art and creativity intimately related; defines the steps in the creative act, points to the idea of the school's responsibility to enkindle the potential creativeness of each student to the need for training in creativity and quotes Lowenfeld in his admonishing of teachers to recognize creative ability where it is present and to cultivate it where it is latent.

Carpenter, F. "Improvement of Cognitive Learning Under Conditions of Emotional Stimulation." United States Office of Education, Cooperative Research Grant 2450. Ann Arbor: University of Michigan, due January 1966.

Carpenter, R. "Creativity: Its Nature and Nurture." Educational Leadership 82: 391-95; 1962.

A general hortatory article on what teachers should do to promote creativity.

Carter, C. D. Enrichment Activities for the Gifted Child in the Regular Classroom--Grades 4-8. Cullowhee: Western Carolina College Guidance Clinic, 1963.

Head of governor's school, trained at Cullowhee, gives curriculum for elementary able children in 28 pages. Sequel to Challenge Series.

Carter, H. D. "Over-achievers and Under-achievers in the Junior High School." California Journal of Educational Research 12: 51-56; March 1961.

Overachievers found happier in school, with more curiosity, self-confidence and higher morale. They also have better study habits and plan better.

Cartledge, Connie, and Krauser, E. J. "Training First Grade Children in Creative Thinking Under Quantitative and Qualitative Motivation." Journal of Educational Psychology 54: 295-99; December 1963.

120 first graders lowest in a test of creative thinking were divided into experimentals and controls. Experimentals got five 20-minute training sessions, half being motivated for quantity and half for quality. Differences were noted between trained and non-trained, but not between quality and quantity motivated children.

Casey, J. P. "An Experimental Study of Creativity and the Solving of Social Problems." Unpublished Ed.D. thesis, Bloomington: Indiana University, 1963. Dissertation Abstracts 24: 5074; 1964.

Little difference was found between more and less creative high school students in solving masked situational problems.

Castelli, C. D. An Exploration of the Relationship Between Teacher Creative Ability and Teacher-Pupil Classroom Behavior. Unpublished doctoral thesis, Buffalo, New York: University of Buffalo, 1964.

Castle, D. L. M. Creativity--A Tool of Development in Business. Sydney, Australia: West Publishing Corporation, Pty., Ltd., 1963.

Cattell, R. B., and Drevdahl, J. E. "A Comparison on the (16 P. F.) Personality Profile of Eminent Researchers with that of Eminent Teachers and Administrators and that of the General Population." British Journal of Psychology 46: 248-61; 1955.

An early classic comparison of personality differences between creative scientists and more general subjects on the 16 P. F. test.

Cattell, R. B. "The Personality and Motivation of the Researcher from Measurements of Contemporaries and from Biography." (pp. 119-31) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

Discussion of the researcher profile on the 16 P. F. scale. (A3, B7, E6, F3, G4, H6, I7, O4, Q₁7, Q₂7, Q₃6 Sten scores for the factors.)

Caulfield, J. M. Administrative Problems Related to Programs for the Academic Talented. Unpublished doctoral thesis, New Brunswick, New Jersey: Rutgers University, in process, 1963.

Cawrse, R. C. Provisions for the Academically Talented in Selected High Schools of Ohio. Unpublished doctoral thesis, Cleveland, Ohio: Western Reserve University, 1963.

Chaffee, E. "General Policies Concerning Education of Intellectually Gifted Pupils." (pp. 17-19) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., 1963.

Brief statement on school district policy.

Chalfant, J. C. Demographic and Economic Bases of Services and Facilities for Exceptional Children in Illinois. Unpublished doctoral thesis, Urbana: University of Illinois, in process, 1963.

Chambers, J. A. "Relating Personality and Biographical Factors to Scientific Creativity." Psychological Monographs 78: 7: 1-20; 1964.

Comparisons on biographical and personal data were made on 438 creative and control scientists, the former being found more dominant and having stronger initiative. They also appeared more strongly motivated toward intellectual success.

Chandler, Anna Curtis. "A. V. Enrichment for Gifted Children." Instructor 67: 75; February 1958.

Discusses the values of the audio-visual enrichment program at the Hunter College Elementary School, a special school for gifted children in New York City.

Chavoor, S., and others. "Grouping Practices in Grades Nine through Twelve of the Burbank Unified School District." California Journal of Secondary Education 30: 46-48; January 1955.

Shows how the schools of Burbank, California have devised a program which, the school authorities believe, solves many of the problems that arise in school where nothing is done to provide instruction that corresponds to the level of skill and needs of the students.

Cheyney, A. "Parents View Their Intellectually Gifted Children." Peabody Journal of Education 40: 98-101; September 1962.

Interviews with 121 sets of gifted childrens' parents sought answers to when they knew their child was gifted, how they knew it, and what they did.

Chidley, Nadine. "The Program for Gifted Children in the Winnipeg School District." Canadian Education and Research Digest 2: 46-54; 1962.

A description of the Winnipeg Program involving identification, selection of teachers, and interpretation of parents.

Chorness, M. H. "An Interim Report on Creativity Research." (pp. 278-99) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

Reports on research on instructor performance, application of Thurstone's hypothesis of prefocal thinking, personality differences between creative awardees and opposites and several other studies.

Christensen, P. R., and others. "Relations of Creative Responses to Working Time and Instructions." Journal of Experimental Psychology 53: 82-89; 1957.

In measuring originality, uncommonness and remoteness increase with time. Cleverness was independent of time.

Cicirelli, V. G. The Relationship Between Measures of Creativity, IQ, and Academic Achievement, Interaction and Threshold Effects. Unpublished doctoral thesis, Ann Arbor: University of Michigan, 1964.

Cieboter, F. J. Motivation and the Desire to be Creative, as Examined by Means of Q-Technique. Unpublished doctoral thesis, Gainesville: University of Florida, in process, 1963.

Cincinnati Public Schools, Department of Instruction. Arithmetic Enrichment Ideas for Grades 4, 5, 6. Columbus, Ohio: State of Ohio Department of Education, 1962.

Enrichment ideas are given in the following areas:

- a. Numeration
- b. Fundamental Operations
- c. Other Concepts
 1. Measurement
 2. Patterns
 3. Inequalities
 4. Sets
 5. Exploratory Geometry

Clark, W. H. "A Study of Some of the Factors Leading to Achievement and Creativity with Special Reference to Religious Skepticism and Belief." Journal of Social Psychology 41: 57-69; 1955.

Highest rated constructive factors were: (1) interest and satisfaction in work; (2) desire to know and understand; and (3) desire to aid society. Creative people appear more skeptical.

Cleland, R. S. "An Investigation of the Relationship Between Creative Humor and Authoritarianism." Doctoral dissertation, Gainesville: University of Florida, 1957.

Low authoritarian students on F-test were found highest in humor rating.

Clifford, P. I. A Study of the Personality Organizations of a Selected Group of Highly Creative Chemists and Mathematicians. Unpublished doctoral thesis, Chicago, Illinois: University of Chicago, 1958.

Cluff, J. E. The Effect of Experimentation and Class Reorganization on the Scholastic Achievement of Selected Gifted Sixth Grade Pupils in Wichita, Kansas. Unpublished doctoral thesis, Fayetteville: University of Arkansas, in process, 1963.

Cochran, J. R. "Grouping Students in Junior High School." Educational Leadership 18: 414-19; April 1961.

Results of the Kalamazoo Program were generally negative, although approved by parents and teachers. (Part of a symposium.)

Cohen, D., and others. "Effects of Group Cohesiveness and Training Upon Creative Thinking." Journal of Applied Psychology 44: 319-22; 1940.

Discussion of group dynamics effects on creativity.

Cohen, J. W. "New College Honors Programs." NEA Journal 52: 49-50; February 1963. (Cf. [pp. 298-302] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

An account by the Director of the Inter-University Committee on the Superior Student and its efforts.

(Ed. note: Dr. Cohen is the editor of The Superior Student, 924 Broadway, University of Colorado, Boulder, Colorado, a newsletter devoted exclusively to honors programs in universities. Scholars interested in this subject should consult files of this magazine, most of whose materials are not herein annotated.)

Cole, C. C., Jr., and Lewis, Lanora. Flexibility in the Undergraduate Curriculum. (New Dimensions in Higher Education #10.) Washington, D. C.: U. S. Office of Education, (CE-50032), 1962.

Discusses advanced placement, early admission, special courses, honors programs, and tutorial work in 56 pages.

Coler, M. A., editor. Essays in Creativity in the Sciences. New York: New York University Press, 1963. (For review see Personnel and Guidance Journal 43: 84; September 1964.)

Eleven selected essays from New York University seminar make the following points: Creativity is worldwide, probably not the same for artists as for scientists. The creative product must have use in its time and place, its merit diminishes as the utility diminishes. We have tended to study creative individuals who must operate in some social setting, rather than the social situation in which they operate. Roe's paper presents a review of some 80 references on the psychological approach to creativity.

Cologne, Jeanne. "A. V. Materials Benefit the Nonsegregated Gifted." Instructor 67: 75; June 1958.

Describes ways in which gifted pupils have been allowed to prepare audio-visual materials for class presentation.

Combs, C. F. 'Perception of Self and Scholastic Underachievement in the Academically Capable.' Personnel and Guidance Journal 43: 47-51; September 1964.

Study explored differences in the ways underachievers and achievers perceive themselves and their relationships to the world around them. Achiever and underachiever groups, each consisting of 25 high school junior boys who were 115 IQ or better, were administered an apperceptive device. Protocols were analyzed in terms of six continua of perception. The statistical analyses utilizing t and F tests (with a predetermined 5 per cent Alpha level) demonstrated very significant differences between the groups. Underachievers showed significant and consistent differences from achievers in that they: (a) saw themselves less adequate, (b) saw their peers as less acceptable, (c) saw themselves as less acceptable to others, (d) saw adults as less acceptable, (e) showed an inefficient and less effective approach to problems, (f) showed less freedom and adequacy of emotional expressions. Suggestions are made of certain factors that may produce underachievement and certain possible directions for future research.

Cook, P. H. "A Look at Creativity." School, Science, and Mathematics 60: 417-23; 1960.

A somewhat naive glance.

Cook, W. W., and Torrance, E. P. "The Educated Man is Creative." Minnesota Journal of Education 41: 17-20; October 1960.

Man is by nature creative. Presented are: (1) a sizeable list of some of the creative thinking abilities thus far identified and measured by Torrance and associates, and (2) a discussion of the important characteristics of the creative personality. Particular stress, however, is placed upon the facts that (a) everybody possesses, to some degree, the abilities involved in being creative, and (b) these abilities can be increased or decreased by training, education's legitimate function. Blocks to the development of creative thinking, either by parents or by teachers, are explored with suggestions from research findings on how they may be overcome.

Cook, W. W., and Clymer, T. "Acceleration and Retardation." (pp. 179-208) in Individualizing Instruction. 61st Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1962.

"It is time that emphasis shift from grading, grouping, promotion, and acceleration to the type of school organization and equipment which enables well-prepared teachers to meet the needs of individual pupils in heterogeneous groups."

Copley, F. O. The American High School and the Talented Student. Ann Arbor: University of Michigan Press, 1961.

A 92-page booklet, the final chapter of which deals with the advanced placement program, and details its history and development.

Corcoran, Lucile. Factors Related to Creativity. Unpublished doctoral thesis, College Park: University of Maryland, 1963.

Cornish, R. L. "Administrator's Opinions on the Education of Gifted Children." Gifted Child Quarterly 8: 117-22; Autumn 1964.

Survey of administrative opinion finds few really concerned about gifted.

Cortes, J., and Fedell, J. C. "Relationship Between Measures of Academic Motivation and Achievement in College." U.S. Office of Education, Cooperative Research Grant 2431. Washington, D.C.: Georgetown University, due June 1966.

Coutant, Madeline. "A Program of Parents and Community Participation in Education of the Gifted." Gifted Child Quarterly 5: 71; Summer 1961.

The parental and community aspects of the Oneida County Program for the Gifted are briefly described.

Coutant, Madeline. "Cooperative Arrangements Among New York State Schools for the Education of Students with Special Interests and Abilities." Ed.D. thesis, New York: Teachers College, Columbia University, 1964.

Cowles, M. A Comparative Study of Certain Social and Emotional Adjustments of Homogeneously and Heterogeneously Grouped Sixth Grade Children. University Microfilms, Inc., 63-3655.

Crow, L. D. "The Teacher of the Academically Able." (pp. 272-75) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., 1963.

A rather general statement that the teacher should be effective.

Crow, L. D., and Alice. Educating the Academically Able: A Book of Readings. New York: David McKay Co., 1963.

Eighty-five articles by various leaders on all phases of the subject. Most articles not in 1961 bibliography are cited herein.

Crutchfield, R. S. "Conformity and Creative Thinking." (pp. 120-40) in Gruber, H. E., and others, editors. Contemporary Approaches to Creative Thinking. New York: Atherton Press, 1963.

Conformity is seen as an opposite to creativity, and as an inhibitor of reactive action. Personality factors in conformists and creatives are analyzed by IPAR research.

Crutchfield, R. S. "Experiments in Creativity." Paper read at American Psychological Association Convention, 1964.

Interim report by University of California IPAR researcher on teaching children to become more creative in thinking by a kind of detective story curriculum of programmed learning which requires the child to deduce next steps.

Curtis, T. E. "Problems in Education of the Gifted." Gifted Child Quarterly 8: 134-40; Autumn 1964.

A rather general discussion on education of able students.

Dailard, R., superintendent. "Enrichment for Gifted Children in the Elementary Grades, San Diego." (pp. 76-82) in Crow, L. D., and Alice, Education the Academically Able: A Book of Readings. New York: David McKay Co., 1963.

Description of a real enrichment program. (For others in Niagara Falls, Los Angeles, Portland, see ibid., pp. 67-88.)

D'Alessio, T. A Study of the Relationship of Fifth Grade Children's Expressed Perceptions and Feelings Regarding Teachers to their Performance in Academic and Imaginative Activities. Unpublished doctoral thesis, New York: New York University, 1963.

Datta, Lois-Ellin. "Test Instructions and Identification of Creative Scientific Talent." Psychological Reports 13: 495-500, 1963.

The performance of 16 scientists told to "be creative" in working on 3 open-ended tasks was compared with the performance of 15 scientists given neutral instructions. Under neutral instructions, the relation of performance (as measured by a summary score reflecting the judged quality and originality of response and response frequency) on the tasks and rated on-the-job creativity as an inverted U ($\rho=17$). In comparison to this group, "be creative" instructions improved the test performance in the scientists rated in the upper third of the creativity distribution, depressed the performance of the lower rated men, and did not affect the performance of the middle group ($\rho=+.71$). The neutral instructions usually given may substantially decrease the power of tests to discriminate among more and less creative individuals.

David, R. J. "Underachieving Students of High Capacity." Journal of Higher Education 23: 327-30; 1952.

Found negative attitude in underachievers and two factors: lack of proper investment of time, and lack of inspiration to study.

Davids, A., and Sidman, J. "A Pilot Study, Impulsivity, Time Orientation, and Delayed Gratification in Future Scientists and In Underachieving High School Students." Exceptional Children 29: 170-74; December 1962.

Scientists were less impulsive, more future-oriented, and less concerned with immediate gratifications than underachievers.

Davis, J. A. Great Aspirations. Chicago: Aldine Publishing Co., 1964.

There is great loss occurring in the potential of young men of high ability because of ignorance of, lack of counseling about postponement of college and graduate study. A systematic attempt needs to be made in our schools to counsel all of high academic promise during their early school years to attend college and graduate school.

DeHaan, R. F. "Identifying Gifted Children." School Review 65: 41-48; March 1957. (Cf. [pp. 66-72] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

Describes the main outlines of a total school program for identification of gifted children to include measuring ability, interests, personality, aptitudes, and achievement.

DeHaan, R. F. Guidelines for Parents of Capable Youth. Chicago: Science Associates, 1961a.

A 48-page pamphlet for parents with five chapters: (1) What are they like? (2) Cooperating with the School; (3) Cues for Parents. (4) Preparing for the Future. (5) Use of Community Resources. Material is sensibly written, neither talking down to parents nor employing too much educational jargon. Should be useful for counseling with parents of the able, and for removing worry and concern.

DeHaan, R. F., and Havighurst, R. J. Educating Gifted Children. (Revised Edition.) Chicago: University of Chicago Press, 1961b.

Good development of general theory and practice of gifted child education in 362 pages. Chapters on identification, administrative provisions, school practice, motivation, and teaching methods have been substantially revised.

DeHaan, R. F. Accelerated Learning Programs. Englewood Cliffs, New Jersey: Prentice-Hall, 1963.

Deitrich, F. R. "Comparison of Sociometric Patterns of Sixth Grade Pupils in Two School Systems: Ability Grouping Compared with Heterogeneous Grouping." Journal of Educational Research 57: 507-13; 1964.

Ability grouping found not necessarily to limit a child in his peer relationships,

Demos, G. D., and Spolyar, L. J. "Academic Achievement of College Freshmen in Relation to the Edwards Personal Preference Schedule." Educational and Psychological Measurement 21: 473-79; 1961.

Compared EPPS results on 245 Long Beach State College freshmen with respect to SCAT scores and GPA. No significant EPPS differences were found between achievers (high SCAT, high GPA) and underachievers (high SCAT, low GPA), or between overachievers (low SCAT, high GPA) and nonachievers (low SCAT, low GPA) were found.

Denise, T. C., and Burns, H. W. "Knowledge and Creativity." (pp. 13-30) in Gardner, E. F., chairman. Proceeding of the 1962 Invitational Conference on Testing Problems. Princeton, New Jersey: Educational Testing Service, 1963.

"Contrary to some literature which frees creativity from the terra firma of past experience and seems to base it on a metaphysic ideational free-wheeling and transempirical dealing, we believe that creativity is cognitively based. We suggest that creativity cannot be separated from knowledge, nor the creative process from the knowing process, and therefore that a thorough analysis of creativity must open and close with epistemological considerations."

Dennis, W. "Age and Productivity Among Scientists." Science 123: 724-26; 1956. (Cf. American Psychologist 13: 457-60; 1958.)

Disputes Lehman that productivity occurs in the early years in scientists; in top scientists it often continues to end of life.

Dentler, R. A., and Mackler, B. "Originality: Some Social and Personal Determinants." Behavioral Science 9: 1-7; 1964.

One component of creativity is originality. The present paper reports a study of the effects of interpersonal relationships and personality traits on the development of original ideas.

Derthick, L. C. "Both Creativity and Intelligence are Important." Michigan Educational Journal 38: 276-77; 1960.

Under the Cooperative Research Program an effort is being made (1) to distinguish between the creative child and high IQ child; (2) to identify creativity as a component of giftedness, showing that this talent can be measured and soon appropriate tests will be available for our schools; (3) to trace the development of characteristics of creative ability; and (4) to describe a previously unknown phenomenon (the 4th grade slump in creativity). Investigations are now underway as to why these developmental characteristics of creative ability occur and to plan for school programs which will increase the level of creative ability in students.

Dessart, D. J. "A Study of Programmed Learning with Superior Eighth Grade Students." Unpublished Ph.D. thesis, College Park: University of Maryland, 1961. Dissertation Abstracts 24: 1499; 1964.

Complex data emerged when teacher-taught classes were compared with machine-taught classes.

Dever, W. T. The Relationship Between the Creative Thinking Ability of Selected Fourth Graders and Parental Attitudes. Unpublished doctoral thesis, Denton: North Texas State University, 1964.

Dible, Isabel. Third Annual Report on Education for the Academically Able and Talented and the State Gifted Minor. Beverly Hills: Beverly Hills, California School District, Curriculum Bulletin No. 25, 1964a.

Contents-Programs for the State Gifted Minors, Programs for the Academically Talented and Able with appendices on criteria for recommendation of pupils to the programs, and communication to parents.

Dible, Isabel. A Statistical Analysis of Pupils' and Parents' Perceptions of Extended Day Programs in the Elementary Schools. Beverly Hills: Beverly Hills, California School District, Curriculum Bulletin No. 28, 1964b.

Found parents and children perceived considerable growth in cognitive development as a result.

Dockrell, W. B. "Special Education for Gifted Children." Canadian Education and Research Digest 2: 37-45; March 1962.

A review of education for the gifted, especially grouping, with 47 citations.

Dodes, I. A. "Mathematics at the Bronx High School of Science." The Bulletin of the National Association of Secondary-School Principals 43: 81-83; May 1959.

A brief description and discussion of new advanced courses at the Bronx High School of Science in New York City. Many of the courses are based on group and set theory in mathematics and related topics, and developed through these functional approaches. Five senior courses cover: (1) advanced algebra, solid geometry, and analytics; (2) principles of mathematics including as a part, vector analysis, and solid analytics; (3) computer and scientific mathematics; (4) analytic geometry and calculus; and (5) a combination of (1) and (2) with abstract algebra, statistical inference, and programming.

Douglass, C. C. Some Considerations in Facilitating the Development of Giftedness During Elementary School Years. University Microfilms, Inc., 63-2249.

Drake, L. E. "MMPI Patterns Predictive of Underachievement." Journal of Counseling Psychology 9: 164-67; 1962.

Found 4-9 pattern (elevation on psychopathic deviate and manic) to be characteristic.

Drevdahl, J. E. "Educational Etiology of Creativity." Gifted Child Quarterly 6: 91-94; Autumn 1962.

Adult study finds creative persons less authoritarian, and a product of less structured training. They were less influenced by their professors, and had published more in college. Feels that formal training blunts creativity.

Drevdahl, J. E. "Some Developmental and Environmental Factors in Creativity." (pp. 170-86) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

An investigation of creative vs. non-creative psychologists using Cattell's personality tests and biographical data. On the 16 P.F. questionnaire the creative group were lower on factors E, F, H and higher on G and N than the non-creative productive group; they were higher on H, O and 4 and lower on M than the non-creative, non-productive group.

Drews, Elizabeth. "Profile of Creativity." NEA Journal 52: 1: 26-28; January 1963a.

Reactions of a thousand students revealed that we need to accept and value creative behavior of students and supply them with challenging experiences.

Drews, Elizabeth. "The Four Faces of Able Adolescents." Saturday Review 46: 68-71; January 19, 1963b.

Describes social leaders, high achievers, creative intellectuals, and rebels in high school population.

- Drews, Elizabeth. "The Development of Talent." Teachers College Record 65: 210-19; December 1963c.
Discusses issues in the development of talent including mental health, models, and other methods of facilitation. 32 citations.
- Drews, Elizabeth. The Effectiveness of Special Training with Audiovisuals in Changing Aspirations on Intellectually Superior Students. Cooperative Research Project. East Lansing: Michigan State College, 1964a.
The effectiveness of films of lives of great men on the motivation of students was measured.
- Drews, Elizabeth. A Study of Non-Intellectual Factors in Superior High School Students. Cooperative Research Project. East Lansing: Michigan State College, 1964b.
- Drews, Elizabeth. Student Abilities, Grouping Patterns, and Classroom Instruction. Cooperative Research Project. East Lansing: Michigan State College, 1964c.
- Drews, Elizabeth, and Montgomery, Susan. "Creative and Academic Performance in Gifted Adolescents." High School Journal 48: 94-101; November 1964d.
A description of creative and academic performance in various types of gifted adolescents. Gives scores of groups on omnious personality inventory.
- Duff, O. L., and Siegel, L. "Biographical Factors Associated with Academic Over- and Under-Achievement." Journal of Educational Psychology 51: 43-46; February 1960.
A study of decile discrepancy between ability and achievement of 1,454 Miami University students revealed (1) females use their ability more effectively, (2) sports activity is negatively related to achievement, (3) high ability overachieving females are more conforming.
- Duncan, D. K. Programs for Mentally Gifted Minors and Other Gifted Students in the Unified School Districts of California. Unpublished doctoral thesis, University of Southern California, 1964.
- Dunkel, H. B. "Creativity and Education." Education Theory 11: 201-16; 1961.
Creativity is characterized as a "universally immanent rhythmic thrust toward novelty." The function of teachers and institutions should be to aid the natural bent of the student by: (1) preventing waste; (2) eliciting enthusiasm; (3) facilitating new entities, new ideas, and new experience; and (4) imagination. The formal processes of education are one complex means by which the creative advance into novelty is, in the case of mankind, rendered more efficient and more fruitful.

Dunnette, M. D., and others. "The Effect of Group Participation on Brain-Storming Effectiveness for Two Industrial Samples." Journal of Applied Psychology 47: 30-37; February 1963.

Problems were presented for brainstorming to 48 research scientists and 48 advertising personnel employed by Minnesota Mining and Manufacturing Company. Within a counterbalance experimental design, each subject brainstormed certain problems, individually, and others equated problems as a member of a 4-man team. Individuals produced not only more ideas than groups, but they accomplished this without sacrificing quality. The net superiority of individual brainstorming over group brainstorming was relatively greater when it was preceded by group participation. "Apparently, group participation has an inhibitory influence on creative thinking during brainstorming."

Durr, W. K. "Dimensions of Enrichment." Exceptional Children 26: 202-06; December 1959.

An attempt to clarify what the term "enrichment" means and to define these three basic dimensions of enrichment: (1) horizontal, (2) vertical, and (3) supplementary. Enrichment patterns and specific enrichment activities are evaluated and recommendations are made. A bibliography is included.

Durr, W. K. "Provisions for the Gifted in Relation to School Size and System Size at the Elementary Level." Journal of Educational Research 55: 147-58; December 1961-January 1962.

In questionnaire of 316 schools found differences between small and large schools. Smaller schools were less likely to have programs, used partial segregation more often, make less use of IQ tests, felt handicapped by finances more often. Many tables.

Durr, W. K. The Gifted Student. New York: Oxford Press, 1964a.

General book of 290 pages and 15 chapters, rather lightly researched. There are chapters on creativity, motivation, guidance, and administration, but there is little here not better available elsewhere.

Durr, W. K., and Schmatz, R. R. "Personality Differences Between High Achieving and Low Achieving Gifted Children." The Reading Teacher 17: 251-54; January 1964b.

A somewhat uncontrolled study found low achievers with poorer attitudes toward school, less satisfactory work, and a feeling that their needs were less likely to be met.

Durst, L. K. "The Rice Institute Summer Program for Talented High School Students." Bulletin of the National Association of Secondary-School Principals 43: 74-76; May 1959.

A brief description of the Rice Institute Program which allows twenty-five high school students in Texas to participate in a five-week study of abstract mathematics during the summer.

Dutton, W. S. "Dr. Meister's Beautiful School." National Parent-Teachers 49: 4-7; June 1955. (Cf. Readers Digest 68: 111-14; April 1956.)

A story of the outstanding New York City High School of Science, it tells of its many accomplishments and its aim, which is "to make each class a laboratory for finding out facts, for testing ideas, and for solving problems."

Dye, Sister Mary Elizabeth. An Inquiry Into Creativity and Its Nurturing Climate: An Exploratory Study. Unpublished doctoral thesis, St. Louis, Mo.: St. Louis University, 1963.

Eagle, Alice M., and Kinker, H. R. "Do Intellectually Superior Students Take Soft Courses?" Phi Delta Kappan 39: 402-04; June 1958.

Schools are being attacked for allowing superior students to take soft courses. This study supports the opinion that superior students are not taking the easy way out; they are taking more courses than necessary for graduation, and they select hard courses when available. Most important they select these courses on their own volition.

Eales, J., and others. "Grouping Practices in the Secondary Schools of Los Angeles County." California Journal of Secondary Education 30: 54-57; January 1955.

A summary of grouping practices which are: (1) reasons for grouping; (2) grouping by subject and grade; (3) ability levels; (4) criteria for formation of groups; (5) groups for the mentally retarded; (6) groups for the gifted, and (7) advantages and disadvantages of grouping.

Eash, M. J. "Grouping, What Have We Learned?" Educational Leadership 18: 29-34; April 1961.

A generally negative review of research (28 citations) shows that: (1) grouping itself does not improve achievement; (2) detrimental effects are found with lower ability groups; (3) early grouping favors SES children; (4) college achievement appears independent of grouping; and (5) broader educational objectives may be destroyed. (Part of a symposium.)

Easton, Judith. "Some Personality Traits of Underachieving and Achieving High School Students of Superior Ability." Bulletin Maritime Psychological Association 8: 34-39; April 1959. (Cf. Psychological Abstracts 34: 4786; 1960.)

Underachievers found more egocentric, with less drive and less satisfactory parental relations than achievers.

Edmondson, D. E. "The JvN Memorial Mathematics Summer Seminar for Talented High School Students." Bulletin of the National Association of Secondary-School Principals 43: 77-78; May 1959.

A brief description of the summer seminar in mathematics for talented high school students sponsored by Southern Methodist University. The seminar accepts twenty-five high school students from Texas for five weeks of non-credit study in abstract mathematics.

Ehrenzweig, A. "The Creative Surrender." American Imago 14: 193-210; 1957.

The creative use of imagery depends on a flexible ego rhythm swinging between widely distant levels. Marion Milner (Joanna Field: An Experiment in Leisure) believes that the first stage in the creative process is a temporary giving up of discriminating ego which tries to see things objectively and rationally. Then the way to "oceanic undifferentiation" is open. Imagery loses its precise definition and sharp boundaries and "merges with other images into new symbolic equations." As the ego rhythm rebounds, the image recrystallizes and reassumes an independent existence. There is a distinctly manic quality to the creative surrender. 18 references.

Ehrhardt, Harryette. "Critical Requirements for Teaching Intellectually Gifted Children." Educational Facts 3:5. Houston, Texas: University of Houston, College of Education. Dissertation Abstracts 24: 3226; 1963.

Effective teachers were effective in subject matter, motivation, explanation, use of class time, impartial, made fair assignments, gave fair and realistic tests and marks.

Eisenman, B. "Birth Order and Artistic Creativity." Journal of Individual Psychology 20: November 1964.

Eisner, E. W. "Research in Creativity: Some Findings and Conceptions." Childhood Education 8: 371-75; April 1963.

A popular discussion of types of creativity and the research of Guilford, Torrance, and others. (Part of a symposium.)

Eisner, E. W. The Development and Use of Typology of Creative Behaviors in the Visual Arts. Unpublished doctoral thesis, Chicago: University of Chicago, 1964.

Ekstrom, Ruth. "Experimental Studies of Homogeneous Grouping: A Critical Review." School Review 69: 217-26; February 1961.

Review of 40 citations concluded that there was no consistency of design nor stable pattern of results; however, in experiments that specifically provided differentiation in materials and methods, results did tend to favor homogeneous grouping.

Ekstrom, Ruth. "Early Admission to College." Journal of Educational Research 7: 408-12; April 1964.

Summary of the final report to the Fund for Advancement of Education showed that early entrants to college suffered no difficulties.

Elder, Florence L. "A Junior High School Seminar for Talented Students." Bulletin of the National Association of Secondary-School Principals 43: 95-98; May 1959.

A description of the junior high school seminar in mathematics at West Hempstead Junior-Senior High School, West Hempstead, New York. Identification policies and the organization and objectives of the seminar are discussed.

Elliott, J. M. "Measuring Creative Abilities in Public Relations and in Advertising Work." (pp. 396-400) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964. (Cf. Creativity Review 5: 1: 4; January 1963.)

Discusses public relations and advertising aspects of creativity. Reports experiment using Guilford tests to find highly creative advertising writers.

Elliott, M. H. "Criteria for Class Placement of Gifted, Oakland." (pp. 331-36) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., 1963.

Useful rules of procedure for placement of able.

Endicott, F. H. Guiding Superior and Talented High School Students. Superior and Talented Student Project. Chicago, Illinois: North Central Association of Colleges and Secondary-Schools (5835 Kimbark Avenue), 1961.

A somewhat stereotyped approach to counseling the gifted student in 84 pages and 8 chapters. Chapter 6 on counselors relationship to parents and teachers is useful. Last chapter contains a check list of evaluative criteria for guidance.

Englehart, Veronika. "The Effects of Length of Training and Manifest Anxiety on the Training and Transfer of Originality." Unpublished Ph.D. thesis, Iowa City: State University of Iowa, 1962. Dissertation Abstracts 23: 2992; 1963.

Originality increased in training but was unaffected by anxiety level.

Engelstein, Sadie S., and Miller, Henrietta H. "Offer Advanced Work to Gifted Students at Senn High School." Chicago Schools Journal 39: 129-36; January-February 1958. (Cf. Bulletin of the National Association of Secondary-School Principals 42: 32-38; 1958.)

Describes and evaluates the Advanced Placement Program in history at Senn High School, Chicago, Illinois.

England, June. How do Your Gifted Grow? Detroit, Michigan: Wayne County Study of the Gifted (301 City-County Bldg., 48226), February 1960.

Booklet describing the Wayne County Program.

Engle, K. B. An Exploratory Study of the Identification and Self-Realization of the Potentials of the Gifted Underachiever in the Kalamazoo, Michigan, Public Schools. Unpublished doctoral thesis, East Lansing: Michigan State College, in process, 1963.

Enzmann, A. M. "Specialized High School for Gifted Students." Bulletin of the National Association of Secondary-School Principals. 47: 287: 1-7; December 1963a.

Author opposed to grouping cities. Detroit study which indicated that grouped gifted students did no better on achievement tests or in colleges than non-grouped students.

Enzmann, A. M. "A Comparison of Gifted Students in Regular and Separate Programs." Gifted Child Quarterly 7: 176-82; Winter 1963b.

Study of grouped and non-grouped gifted students on STEP tests and grades 10 and 12 in high school found few significant differences in subject achievement. Concludes that grouping gifted students does not result in superior achievement.

Eriksen, Sarajane Lininger. The Role of the Counselor in Large High Schools of California. Unpublished doctoral thesis, University of Southern California, 1964.

Even, L. R. "An Experimental Study of the Comparative Effect of Selected Art Experiences on the Creative Performance and Attitudes of Academically Superior Students." Unpublished Ph.D. thesis, Minneapolis: University of Minnesota, 1963. Dissertation Abstracts 24: 4470; 1964.

Using pre- and post-creative tests it was found that art students gained more in originality, flexibility, and elaboration while the control group gained in fluency. Concludes art training may make bright college students more original.

Everett, S., editor. Programs for the Gifted: A Case Book in Secondary Education. (15th Yearbook of the John Dewey Society.) New York: Harper & Brothers, 1961.

Strongest in presenting new material on the theoretical and historical aspect. Also describes six operational programs: (1) Lewis County, New York; (2) Germantown Friends Schools; (3) University High School at Ohio State University; (4) Grant High School in Portland, Oregon; (5) Evanston Township High School, Illinois; (6) the Bronx High School of Science, New York.

Fabri, R. "Tribulations of the Artistic Child." Gifted Child Quarterly 8: 64-94; Summer 1964.

Introduces symposium issue of 8 articles on art and the gifted including those on identification and others.

Fahey, R. W. "Parents and Teachers Participate in a Gifted Child Program." Gifted Child Quarterly 7: 157-64; Winter 1963.

An account of a gifted child program in Arizona.

Fair, Jean. "A Comprehensive High School Studies Learning." Educational Leadership 16: 351-54; March 1959.

A survey of Evanston Township High School produced among others high ability underachievers. They saw themselves as less able and less self-reliant than high achievers, and were not helped by a variety of remedial efforts.

Farber, W., and Wilson, R. H. L., editors. Conflict and Creativity. New York: McGraw-Hill Book Co., 1963.

Farquhar, W. W., and Payne, D. A. "A Classification and Comparison of Techniques Used in Selecting Under- and Over-Achievers." Personnel and Guidance Journal 42: 874-84; May 1964.

Sets up standards for defining underachievement and analyzes other studies on this basis. The criterion definition is that underachievement represents performance one standard error of measurement below the mean of the regression line prediction by the aptitude test. 34 citations.

Farr, J. M. "Motivating an Industrial Research Group." Research Management 6: 2; 1963.

The task of the creative manager is to tie the task goals to the ego goals which have meaning for the men involved. The results of creative action are often not rewarding in terms of extrinsic motivations such as praise, etc. In trying to motivate men to produce a desired behavior the manager must define the behavior when it occurs and see that it is quickly and surely rewarded.

Faust, C. H. "Why the New Concern for Education of the Gifted?" School Review 65: 12-19; March 1957.

Stresses the importance of not just developing manpower, but of treating the gifted child in terms of his individual potentialities.

Feldhusen, J. F., and Klausmeier, H. J. "Anxiety, Intelligence, and Achievement in Children of Low Average, and High Intelligence." Child Development 33: 403-09; 1962. (Cf. [pp. 83-89] in Ripple, R. E., editor. Readings in Learning and Human Ability. New York: Harper & Row, Publishers, 1964.)

Significant negative correlation found between anxiety and cognitive abilities, and anxiety and I. Q. in both boys and girls and low, average, and high intelligence. Mean anxiety level higher for girls than for boys.

Feldhusen, J. F. "Programing and the Talented Pupil." Clearing House 38: 151-54; November 1963.

A discussion of how machine programed learning can be utilized with gifted students.

Fenner, Mildred, editor. "Elementary School Program for the Under-achiever." NEA Journal 51: 8: 14: 14-17; November 1962.

A symposium of several different methods used to combat underachievement.

Fenton, E. "Curriculum Development for Able High School Students at Carnegie Institute of Technology." The Superiro Student 6: 1: 10-12; December 1963.

Discusses five programs and their interrelationship.

Ferguson, D. G. "Professional Roles in the Vocational Guidance of Gifted Children." Vocational Guidance Quarterly 11: 241-46; Summer 1963.

Transcription of speech makes rather general article re guidance of able students.

Fick, W. W. The Effectiveness of Ability Grouping in Seventh Grade Core Classes. University Microfilms, Inc., 63-794.

Fiedler, F. E. "Leader Attitudes, Group Climate, and Group Creativity." Journal of Abnormal Social Psychology 65: 308-18; 1962.

Leaders who perceive their least preferred co-worker favorably tend to be most effective under pleasant and relaxed group conditions while their opposites are most effective under unpleasant and stressful conditions.

Fiedler, F. E., and Meuwese, W. A. T. "Leader's Contribution to Task Performance in Cohesive and Uncohesive Groups." Journal of Abnormal Social Psychology 67: 83-87; 1963.

The leader influences the effectiveness of the group only if it is cohesive.

Fiedler, F. E. "The Effect of Group Climate on the Leader's Influence on Creative Group Performance." (pp. 401-09) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

Creativity in leadership and group activity.

Fink, M. B. "Objectification of Data Used in Underachievement Self-Concept Study." California Journal of Educational Research 13: 105-12; 1962. (Cf. Psychological Abstracts 37: 2008; 1963.)

Further analyzing the data obtained in an earlier study, "Self-Concept as it Relates to Academic Underachievement," it was found that at the 0.5 level of confidence or better, 48 items on the California Psychological Inventory were found to discriminate between high- and low-achieving boys, 23 between high- and low-achieving girls, and 72 between high- and low-achieving boys and girls. The nature of these items "would appear to support the judges' decisions as to adequacy or inadequacy of self-concept."

Fink, M. B. "Cross Validation of an Underachievement Scale." California Journal of Educational Research 14: 147; September 1963.

Includes tables of:

1. Items more characteristic of high-achieving boys and girls.
2. Items more characteristic of low-achieving boys and girls.
3. Number of items which discriminate at each level of significance in the two studies.

Includes list of 69 items related to academic underachievement.

Fischer, L. "Social Philosophies and the Concept of Giftedness." Gifted Child Quarterly 5: 93-95; Autumn 1961.

Examination of giftedness under fascism, communism, individualism, and liberalism. Believes that training of gifted students merely as means to social ends is not enough.

Flagg, Elinor. "Mathematics for Gifted Children." Educational Leadership 19: 379-82; March 1962.

A description of a 6th grade program in arithmetic for able students.

Flanagan, J. C. "The Definition and Measurement of Ingenuity." (pp. 89-98) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

An ingenious solution is practical, clever, and novel in the sense of providing a surprisingly good solution.

Fleming, E. S., and Weintraub, S. "Attitudinal Rigidity as a Measure of Creativity in Gifted Children." Journal of Educational Psychology 53: 81-85; 1962.

Inverse relationship found between verbal creativity and attitudinal rigidity in school children. Found drop in creativity at end of 3rd grade. Verbal and non-verbal creativity independent.

Flescher, I. "Anxiety and Achievement of Intellectually Gifted and Creativity Gifted Children." Journal of Psychology 56: 251-68; 1963.

Creativity not found related to academic success. A factor analysis revealed the multifactorial nature of the creativity battery. Avers that genuinely gifted persons have a high order of both intelligence and creativity.

Flick, P. An Intercorrelative Study of Two Creative Types: the Visual Type and the Haptic Type. Unpublished doctoral thesis, University Park: Pennsylvania State University, 1960.

Fliegler, L. A., editor. Curriculum Planning for the Gifted. Englewood Cliffs, New Jersey: Prentice-Hall, 1961.

A valuable text for curriculum for the gifted. Contains chapters on arithmetic, social studies, mathematics, science (elementary and secondary), creative writing, reading, foreign languages, creative art, music, and creative dramatics.

Forrest, A. "Counseling Talented Students on College Choice." Personnel and Guidance Journal 40: 42-47; September 1961.

Practical tips for the college counselor include suggestions that: (1) college size, sex, cost, religion, location, curriculum, and prestige are important; (2) change and growth of interests and maturity of the brightest students while in college should be expected; and (3) there is no best college for all talented students; each placement must be individual.

Fox, R. P. A Study and Analysis of Twenty-three Programs for Gifted Science Students in U. S. High Schools. Thesis, Boston, Massachusetts: Boston University, 1960. Dissertation Abstracts 21: 3015; 1961.

Study sought to: (1) discover guiding philosophies and practices used to help gifted science students; (2) to analyze similarities of training in various programs; and (3) to establish trends of practices which seemed most successful.

Research was in four parts: (a) students selected from 1956-57 Talent Scout Search; (b) questionnaires were sent to principals, guidance counselors, and science department chairmen; (c) author visited 70% of schools; and (d) case studies were made of 16 schools.

Fowler, W. "The Concept of the Gifted Child and the Preschool Years." Gifted Child Quarterly 7: 102-05, Autumn 1963.

Believes that early stimulation is responsible for the gifted child.

Frankel, E. "Effects of a Program of Summer Study on the Self-Perception of Academically Talented High School Students." Exceptional Children 30: 245-51; February 1964.

An account of the St. Paul summer school for gifted children in New Hampshire with an evaluation of outcomes in terms of increased self-concept (which improved).

Frankston, L. "Some Explorations of the Effect of Creative Visual Art Experiences upon Poetry Writing Quality of Eighth Grade Students." Studies in Art Education 4: 42-59; Fall 1963.

Four classes of 8th grade students (103) were given three performance tests in art and three in poetry at the beginning and end of the semester. The negative findings in this study suggest that by the time children have reached the age of 13 or 14, their pattern of creative behavior and performance is so set and molded as to make noticeable changes difficult to measure over a short period of time. At this grade level there is a lull in the student's growth; the quality of the student's performance, regardless of the courses they took, showed neither gain nor loss.

Franseth, Jane. "Selected References on Grouping Children in the Elementary School: Research and Implications." Washington, D. C.: U. S. Office of Education, Division of Elementary and Secondary Education, No. 36, (OE-23032), 1963a.

Unannotated bibliography of 15 pages on grouping.

Franseth, Jane. "Freeing Capacity to be Creative." New Insights and the Curriculum. 1963 Yearbook. (Edited by A. Frazier.) Washington, D. C.: Association for Supervision and Curriculum Development, a department of the National Education Association, 1963b.

A somewhat unimaginative review of recent work in creativity by Barron, Guilford, Taylor, Anderson, and others. Good definitions of creativity, but little on specifics of teacher behavior that free youngsters to be creative.

Franseth, Jane. "Does Grouping Make a Difference in Pupil Learning?" Washington, D. C.: U. S. Office of Education, (OE-32007), 1963c.

A rather partisan attack on grouping which quotes considerable research opposed to it, but little in favor.

Fraser, Dorothy M. "Current Curriculum Studies in Academic Subjects." Mathematics 31: 34-36; June 1962.

Gifted students should be offered an enriched program providing "faster growth" in depth as opposed to the "speeding up" plan.

SMSG is developing a series of monographs on mathematical subjects to serve as supplementary reading for more able students. Activities being considered for the future are the development of a correspondence course for gifted students in small schools.

Provisions should be made for pupils to progress in mathematical study at a rate proportionate to their abilities. Thus, very capable pupils might complete the work of 7th and 8th grade mathematics in one year and move into advanced study earlier than most of their peers.

Frederickson, R. H. Specific Practices Used by Teachers in the Education of Superior High School Students. Unpublished doctoral thesis, Madison: University of Wisconsin, 1963. Dissertation Abstracts 24: 1500; 1963.

A comparison between laboratory trained teachers and controls found few differences.

Freed, G. O. "A Projective Test Study of Creativity in College Students in Visual Arts." Unpublished Ph.D. thesis, Ann Arbor: University of Michigan, 1961. Dissertation Abstracts 22: 640; 1961.

Rorschach and TAT study found few differences between high- and low-creative art students.

French, J. L. "Preparation of Teachers of the Gifted." Journal of Teacher Education 17: 69-72; March 1961.

Gives outlines of course for teachers of gifted including objectives and topics as per a composite recommendation of 50 educational institutions.

Frierson, E. C. "A Study of Selected Characteristics of Gifted Children from Upper and Lower Socioeconomic Backgrounds." Unpublished Ed.D. thesis, Kent, Ohio: Kent State University, 1963.

Physical status, interests, activities, personality traits, and creativity tests results were compared for 300 children in the Cleveland area.

Froehlich, H. P., and Mayo, G. D. "A Note on Under- and Over-Achiever Measurement." Personnel and Guidance Journal 41: 621-23; March 1963.

A technical report on naval school cadets which points out that instead of isolating criterion groups on the basis of the relationship between ability and achievement, we may express this relationship as a single variable which is useful for prediction of course grades and hence guidance. The index is based on the ratio of the actual final GPA to that average predicted by a set of ability measures.

Fuess, C. M. "A Retreat from Excellence." Saturday Review 43: 21-23; March 26, 1960.

Efforts for talented students are one bright hope for future but must be protected against political, press, public ignorance, and neglect.

Gallagher, J. J. "Social Status of Children Related to Intelligence, Propinquity and Social Perception." The Elementary School Journal 58: 225-31; January 1958.

The purpose of the study (a comparison of social choices of 355 children in 12 classrooms in grades 2-5) was to investigate further the relationship of social choice in the elementary grades of variables of (1) propinquity, (2) intellectability, (3) social perceptiveness, and (4) grade level. Results indicate that (a) the intellectual level of the person being chosen is not of as great importance as had been assumed and that the bright child frequently will choose other than his intellectual peer for a friend, (b) findings throw considerable doubt on previous research, (c) relation of intellect to correctness of social perception showed the bright child more socially perceptive than the average group.

Gallagher, J. J. The Gifted Child in the Elementary School. (What Research says to the Teacher, No. 17.) Washington, D. C.: National Education Association, February 1959.

Highlighted in the author's discussion of 32 pages is his assertion that (1) we must re-examine our educational goals for the gifted, and (2) evaluate the resources available to reach these goals. Questions are raised of (a) Who is a gifted child? (b) Where does giftedness begin? (c) Are the gifted easily identified? (d) What are they like?

In discussing school programs for the gifted, treated are: (1) grouping of children with high intelligence for part of the day; (2) more responsibility to pupils for planning programs; (3) more emphasis on creative and interpretive activities and less time for memorization and routine skills; (4) smaller work groups; (5) more informality, less routine, less rigid time schedules, case study approach; (6) to accelerate or not to accelerate?; (7) curriculum changes; and (8) Who should teach the gifted?

The author reminds the teacher (a) to evaluate the gifted on the basis of his own potential, not status in group; (b) to help him to think creatively; and (c) to keep records of the extra projects.

Gallagher, J. J., and others. "Individual Classroom Adjustments for Gifted Children in Elementary Schools." Exceptional Children 26: 409-22, 432; April 1960. (Cf. [pp. 216-37] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

Subjective reports of parents of children identified as highly gifted indicated improvement as a result of program. Objective tests, however, revealed little.

Gallagher, J. J., and Lucito, L. J. "Intellectual Patterns of Gifted Compared with Average and Retarded." Journal of Exceptional Children 27: 479-82; May 1961. (Cf. Peabody Journal of Education 38: 131-36; 1960.)

Finds that different intellectual levels have their patterns of intellect; research on the Wechsler.

Gallagher, J. J. Analysis of Research on the Education of Gifted Children. Springfield: Superintendent of Public Instruction, Special Study Project for Gifted Children. (n.d.) 1961?

Booklet of 150 pages and five chapters (introduction, identification, characteristics, school adaptations, and recommendations) contains much succinct information and analysis of research. The work will be highly useful in the translation of research results to school practice in which regard it compares favorably with anything available.

Bibliography contains about 150 citations.

Gallagher, J. J. A Conference on Research on the Education of Gifted Children. Cooperative Research Project No. F-006, 1963, James J. Gallagher, Chairman. A report of the conference held at Madison, Wisconsin, on September 25-29, 1962a.

Contains definition of giftedness, cognitive style, underachievement, sex differences, ego development, social environment, program evaluation, the teacher of the gifted, and research strategy. (19 pages.)

Gallagher, J. J. "Productive Thinking." Urbana: University of Illinois, Institute of Research on Exceptional Children, 1962b. (Mimeo.)

A chapter for the Annual Review of Child Development which reviews creativity and productive thinking.

Gallagher, J. J., and Aschner, Mary Jane. "A Preliminary Analysis of Classroom Interaction." Urbana: University of Illinois, Institute of Research on Exceptional Children, 1962c. (Mimeo.) (Cf. Merrill-Palmer Quarterly 9; 1963.)

A Hughes type study of classroom climate reinforced by a structure of intellect breakdown of the kinds of learning going on there.

Gallagher, J. J. "School Programs for the Gifted." (pp. 299-304) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963a.

Good elementary curriculum guide. (For more of same, see ibid., pp. 296-347.)

Gallagher, J. J., and Moss, J. "New Concepts of Intelligence and Their Effect on Exceptional Children." Exceptional Children 30: 1-5; September 1963b.

The authors set forth 4 generalizations: (1) intelligence scores are not stable in individual children but can fluctuate widely during the first 10 years of life; (2) several intelligence tests may measure different cognitive abilities at different age levels; (3) each test, no matter what its level, measures only a limited amount of the total complex of "intelligence"; (4) intelligence tests may have 3 major functions that are often confused: (a) the prediction of future school performance; (b) the pattern of abilities in an individual child or (c) giving information leading to classification.

The authors conclude by suggesting that psychologist provide a general service to special educators by providing precise description of particular cognitive skills.

Gallagher, J. J. Teaching the Gifted Child. Boston: Allyn and Bacon, Inc., 1964.

A valuable general book with a new approach which utilizes concepts from Guilford, Bloom, and others as well as a good deal of research experience at the University of Illinois. Three excellent chapters on curriculum for the gifted: arithmetic, science, and social studies. Other chapters are on creativity, discovery and inquiry training, administration, and personnel.

Gamble, A. O. "NASA's Efforts and Interest in Creativity." (pp. 410-13) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

Discussion of the effort of NASA in creative research.

Gamelin, F. C., and others. "Acceleration in the Elementary Grades." And "Acceleration in the High School." (pp. 112-17) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.

Twin articles describe how acceleration has worked out in several Minnesota districts.

Gardner, S. F. "Creativity in Children: A Study of the Relationship Between Temperament Factors and Aptitude Factors Involved in the Creative Ability of Seventh Grade Children with Suggestions for a Theory of Creativity." Unpublished Ed.D. thesis, University of Southern California, 1963. Dissertation Abstracts 24: 822; 1964.

A number of aptitude, creativity and personality tests were administered to 7th grade children and results factor analyzed. Eleven results given, most important of which was that, except for bright children, IQ is a major influence on creativity. The validity of teacher ratings is questioned.

Garrett, A. B. The Flash of Genius. Princeton, New Jersey: Van Nostrand Co., Inc., 1963.

Garwood, D. S. "Some Personality Factors Related to Creativity in Young Scientists." Unpublished Ph.D. thesis, Claremont, California: Claremont Graduate School, 1961. Dissertation Abstracts 22: 3273, 1962. (Cf. Journal of Abnormal and Social Psychology 68: 413-19; 1964.)

The creative group were more original, dominant, participating, self-acceptant, impulsive and flexible on the CPI. They developed science interest earlier and showed greater access to non-conscious material, showed closer conscious identification with father and closer non-conscious identification with mother than non-creatives.

Gawronski, D. A. "Differences Between Over-Achieving, Normal-Achieving and Under-Achieving High School Students." Dissertation Abstracts 25: 292; 1963.

Study identified 25 under-achievers out of a normal 475 students who were less social, self-controlled, responsible, flexible and achieving than normals on the CPI.

Gemant, A. The Nature of Genius. Springfield, Illinois: Charles C. Thomas, 1961.

A short book of 197 pages on the genius, who is defined as an adult above the 99th percentile, and described as compulsive, universal in applications of his work, difficult in employment situation, and integrated with the spirit of his age.

Gerard, R. W. "How the Brain Creates Ideas." (pp. 115-26) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.

How are ideas produced in the brain is explained by a neuro-physiologist who says that computers may simulate some functions but cannot at present be creative.

Gerber, Barbara. Behavioral Correlates of Psychological Health and Creativity. Unpublished doctoral thesis, Syracuse, New York: University of Syracuse, in process, 1963.

Gerlach, V. S., and others. "Effects of Variations in Test Directions on Originality Test Response." Journal of Educational Psychology 55: 79-83; 1964.

To test the hypothesis that previously reported effects of "brainstorming" on "creative problem solving" may be artifacts of the test directions, each of 6 forms of the Hanger subtest of the AC Test of Creative Ability was administered to a group of approximately 20 subjects. Each form of the test incorporated a variation in the test directions designed to elicit a predicted response class. Analyses indicated insignificant differences in quantity, quality, and order of responses consistent with the nature of the directions.

Gershon, A., and others. "Figural and Symbolic Divergent Production Abilities in Adolescent and Adult Populations." Reports from the Psychological Laboratory, Los Angeles: University of Southern California, No. 29, April 1963.

Two populations were factor analyzed and gave similar factor structure on divergent production abilities.

Getzels, J. W., and Jackson, P. W. "Occupational Choice and Cognitive Functioning: Career Aspirations of Highly Intelligent and Highly Creative Adolescents." Journal of Abnormal and Social Psychology 61: 119-23; July 1960.

A study of gifted adolescents finds that the high I.Q. group gives less unusual occupations and the high creative group is less concerned with conventional standards in choosing an occupation.

Getzels, J. W., and Jackson, P. W. "Family Environment and Cognitive Style: A Study of the Sources of Highly Intelligent and Highly Creative Adolescents." American Sociology Review 26: 351-59; 1961.

Highly creative vs. highly intelligent adolescents came from family backgrounds in which there was less constriction, less status, less bookishness, and a hint of more family relaxation.

Getzels, J. W., and Jackson, P. W. Creativity and Intelligence. New York: John Wiley & Sons, Inc., 1962. (Cf. deMille's review, Educational and Psychological Measurement 22: 803-08; 1962.)

Book of 300 pages and 5 chapters explores differences between highly intelligent and highly creative children in a Chicago lab school. A good chapter traces the psychoanalytic theory of creativity. Chapter 4 discusses moral excellence and high adjustment.

Getzels, J. W., and Jackson, P. W. "The Highly Intelligent and the Highly Creative Adolescent: A Summary of Some Research Findings." (pp. 161-72) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963a.

The first study on the differences between the highly creative and the highly intelligent. Both achieved equally well.

Getzels, J. W., and Jackson, P. W. "Varieties of Giftedness in Children." (pp. 177-85) in Haan, A., and N. Readings in Professional Education. Boston: Allyn and Bacon Inc., 1963b.

This selection is an excerpt of the authors' book, Creativity and Intelligence, 1962, in which the overall argument is that: "giftedness in children has more frequently been defined as a score on an intelligence test, and especially the study of the so-called gifted child has been equated with the study of the single I. Q. variable." Involved in this definition of giftedness are several types of confusion: (1) "the limitation of the single metric, which restricts our observation of the more general phenomenon"; and (2) "its use as if it represented an adequate sampling of all mental abilities and cognitive processes."

The authors plead the case for recognition and inclusion of creative expression in its many attributes within our formal testing programs.

Ghiselin, B. "The Creative Process and Its Relation to the Identification of Creative Talent." (pp. 355-64) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963a.

Freedom and power in configurative action are important in creativity.

Ghiselin, B. "Ultimate Criteria for Two Levels of Creativity." (pp. 30-43) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963b.

A discussion of what kinds of acts are truly creative rather than merely resourceful.

Ghiselin, B., and others. "A Creative Process Check List: Its Development and Validation." (pp. 19-33) in Taylor, C. W., editor. Widening Horizons in Creativity, New York: John Wiley & Sons, Inc., 1964.

Describes development of a check list of attention and feeling on part of creative scientists which appears to have validity.

Gibbons, C. C. "Managers Too Can Be Creative." Michigan Business Review; January 1963.

Details thirteen ways for a manager to be creative.

Gibson, W. C. "Contributions of the Gifted to Scientific Medicine." Gifted Child Quarterly 6: 130-38; Winter 1962.

Historical account of trials and difficulties heaped in way of pioneer M. D.'s in popularizing medical discoveries.

Gifford, G. R., and others. "Creativity, Its Identification and Development." Curriculum Bulletin 20: 244: 1-26; Eugene: University of Oregon, School of Education, May 1964.

Overview of subject reports research including measurement, identification, development and educational implications.

Gilbert, Janet. "Creativity, Critical Thinking and Performance in Social Studies." Unpublished Ed.D. thesis, New York: University of Buffalo, 1961. Dissertation Abstracts 22: 1906; 1961.

Creativity was correlated with critical thinking on the Watson Glaser but few differences were found between high and low creatives on other tests.

Gill, Lois J., and Spilka, B. "Some Nonintellectual Correlates of Academic Achievement Among Mexican-American Secondary School Students." Journal of Educational Psychology 53: 144-49; 1962.

The purpose of this study was to determine personal and maternal correlates of academic achievement among Mexican-American secondary-school students. Four groups (15 each) of achieving and low achieving boys and girls were identified and equated in age, I.Q., grade level and courses taken. Employing standard objective measures, it was shown that achievers manifested reliably less hostility and more social maturity, intellectual efficiency, and conformity to rules. Achieving girls and underachieving boys appear to come from strong mother-dominated homes. Since these findings seem meaningful with respect to this subculture, it is suggested that such study of achievement in minority groups may better clarify the nature of relationships among hypothesized variables.

Ginzberg, E., and others. Talent and Performance. New York: Columbia University Press, 1964.

Follow-up questionnaire study of fellowship awardees at Columbia ten years after found personal and social factors interacting with talent to determine life achievement. (12 chapters, 280 pages.)

Givens, P. R. "Identifying and Encouraging Creative Processes." Journal of Higher Education 33: 295-301; 1962.

An address on characteristics of the creative individual.

Glass, S. J. "Creative Thinking Can be Released and Applied." Personnel Journal 39: 176-77; 1960.

A manager's plea for creativity in industry.

Glennon, V. J. "A Graded List of Readers - To Enrich the Elementary School Mathematics Program." (pp. 195-204) in Enrichment Mathematics for the grades. 27th Yearbook of the National Council of Teachers of Mathematics, Washington, D. C., 1963.

A mathematics book list which should be available to students in the school library.

Goertzel, V. H., and Mildred. Cradles of Eminence. Boston: Little Brown and Co., 1961.

An examination of the childhoods of 400 "eminent" personages selected by virtue of having two biographies in a library. Authors find the childhoods rather stormy. Popular and readable rather than scientific research.

Golann, S. E. "The Creative Motive." Journal of Personnel 30: 588-600; 1962. (Cf. idem The Creativity Motive. Unpublished Ed.D. thesis, Chapel Hill: University of North Carolina, 1961.

High creative males indicated preference for activities allowing for self-expression, independence and utilization of creative capacity. Findings interpreted as being consistent with self actualizing trends of creativity motivation.

Golann, S. E. "Psychological Study of Creativity." Psychological Bulletin 60: 548-65; 1963.

In this review of the psychological study of creativity there are 4 emphases: products, process, measurement, and personality. Three main issues concern questions of: (1) definition and criteria, (2) the process viewed temporally, and (3) necessary personal and environmental conditions. The relationship between creativity and intelligence is discussed to illustrate the need for conceptual re-organization as well as correlational data. We should now be able to utilize personality and stylistic modes as criterion variables and to study how these factors are related at different age levels to behavior that is judged to be creative. This approach holds promise for providing a functional developmental understanding of creativity. (124 references.)

Golburgh, S. J., and Penney, J. T. "A Note on Counseling Under-achieving College Students." Journal of Counseling Psychology 9: 133-38; Summer 1962.

Paper outlines a "counseling procedure for dealing with under-achieving college students on an individual relationship basis for short duration and restricted objectives;" i. e., "sector counseling." "Research points fairly clearly to the likelihood that hostility toward parents, associates and authoritarian figures is a widespread characteristic of underachieving students."

Gold, H. A. "Training Teachers for the Gifted." Gifted Child Quarterly 7: 93-98; Autumn 1963.

An account of the Practicum for the Gifted Child, a course in teacher training at Brooklyn College, New York.

Gold, M. J. Divergent Production Performance as Affected by Type of Task and Length of Test. Unpublished doctoral thesis, Nashville, Tennessee: George Peabody College for Teachers, 1963. Dissertation Abstracts 24: 1920; 1963.

Study explored relationships between several scoring procedures used to assess divergent production and to investigate effects of test length. Short form was favored.

Goldberg, H. R., and others. "Major Achievement Program." Rochester, New York: Rochester Board of Education, 1964. (Mimeo.)

Pamphlet of 40 pages containing suggestions for the organization and implementation of classes for the gifted.

Goldner, B. B. The Strategy of Creative Thinking. Englewood Cliffs, New Jersey: Prentice-Hall, 1962.

Golovin, N. E. "The Creative Person in Science." (pp. 7-23) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

Thoughtful article. Develops 6 ideas from Ghiselin on genesis of creative thinking and points out that the authoritarian Russian climate is not necessarily a bar to creativity.

Goodrich, H. B., and Knapp, R. H. Origins of American Scientists. Chicago: University of Chicago Press, 1952.

Discusses surveys and the college climate which produces scientists, finding that small, Protestant, liberal arts colleges in mid-west and far west have greatest potential. Implications with respect to teacher-student relations are of importance for programs for gifted.

Goralski, Patricia Schwartz. Creativity: Study-Teachers' Perceptions of Approaches to Classroom Teaching. Unpublished doctoral thesis, Minneapolis: University of Minnesota, 1964.

Gordon, W. J. J. Synectics: The Development of Creative Capacity. New York: Harper & Row, Publishers, 1961.

"Synectics theory applies to the integration of diverse individuals into a problem-stating problem-solving group. It is an operational theory for the conscious use of the pre-conscious psychological mechanisms present in man's creative activity." Case histories illustrating the use of synectics' operational mechanisms are provided, together with detailed procedures for organizing and operating synectics groups in industrial contexts. The author's interest in the nature of creative activity culminates in analyses of metaphor and play and their roles in the creative process. (15 page bibliography.)

Gough, H. G. "Construction of a Personality Scale to Predict Scholastic Achievement." Journal of Applied Psychology 36: 361-66, October 1953.

A study to determine some of the non-intellectual factors related to academic achievement. Certain traits were found to be characteristic of high- and low-achievers. A bibliography is included.

Gough, H. G., and Woodworth, D. G. "Stylistic Variations among Professional Research Scientists." Journal of Psychology 49: 87-98; 1960.

Identified the zealot, initiator, diagnostician, scholar, artificer, aesthetician, methodologist, and independent as identifiable research styles among scientists.

Gough, H. G. "Imagination--Undeveloped Resource." (pp. 217-26) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.

Discussion of development of imagination in engineers and others. Centers on personality factors which become "determiners" of creative behavior.

Gough, H. G. "Academic Achievement in High School as Predicted from the CPI." Journal of Educational Psychology 55: 174-80; June 1964.

Using a large sample of 1,384 students from 5 schools, a regression equation for high school grade point average was developed which had a cross-validation coefficient of .56 on 1,371 other students. The predictive equation stressed traits of responsibility, social maturity, capacity for both independent and adaptive achievement and efficiency in the use of personal resources.

Gowan, J. C. Bibliography of Writings on the Education of Able and Gifted Youth. Northridge, California: San Fernando Valley State College, 1960.

An unannotated bibliography of about 2,000 citations cross-indexed on the subject. Essentially similar to the bibliography found in Gowan, J. C., and Demos, G. D. The Education and Guidance of the Ablest.

Gowan, J. C. An Annotated Bibliography on the Academically Talented Student. Project on the Academically Talented Students. Washington, D. C.: National Education Association, 1961.

The predecessor to this work, a cross-indexed annotated bibliography of 800 references on gifted children, about 50 of them on creativity. With few exceptions citations appearing in this previous bibliography are not repeated here.

Gowan, J. C. "The Expanding Concept of Intelligence." TAG Gifted Child Newsletter 6: 3: 1-5; March 1964a.

A review of the growth in the concept of intelligence to embrace structure of intellect aspects and creativity.

Gowan, J. C. "Creativity and Cognitive Competence." Northridge, California: San Fernando Valley State College, 1964b. (Mimeo.) (Paper presented at California Association of School Psychologists and Psychometrists, Disneyland, Anaheim, California, March 1964.) Discusses the relation of creativity to structure of intellect, to Piaget stages, and to achievement.

Gowan, J. C., and Demos, G. D. The Education and Guidance of the Ablest. Springfield, Illinois: Charles C. Thomas, 1964c.

A scholarly and exhaustive review of research on the education of gifted children. Covers history, philosophy, objectives, characteristics, curriculum, guidance, administration, and research. Features of the volume include more research reference (2,000 citations), fuller discussion of objectives, including creativity, more modern treatment of intelligence including the structure of intellect approach, and more emphasis on guidance.

Gowan, J. C., and Torrance, E. P. "An Intercultural Study of Nonverbal Ideational Fluency." Paper read at the Los Angeles Convention of the American Psychological Association, 1964d.

Torrance nonverbal creativity tests were administered in English, Chinese, Malay and Tamil, and ideational fluency results are given by race, grade, stream, and vernacular. Students taught in English were less creative than others taught in their vernacular.

Gowan, J. C. "Underachievement Revisited." High School Journal 48: 101-19; November 1964e.

Review of subject, and difficulties of improving performance of underachievers. Suggests cause for underachievement may be lack of creativity rather than lack of motivation.

Gowan, J. C., and Demos, G. D., editors. The Guidance of Exceptional Children: A Book of Readings. New York: David McKay Co., Inc., 1965.

Contains a chapter on gifted children, and one on underachievers.

Graham, Bessie, and Jesson, Margaret. "One Community's Approach to Education for the Gifted." Gifted Child Quarterly 7: 146-50, Winter 1963.

An account of an elementary program at Los Gatos, California.

Grater, H. A., and others. "The Social Service Interest: Roadblock and Road to Creativity." Journal of Counseling Psychology 8: 9-13; 1961.

A "thought piece" which affirms that nurturance is the core of social service, and hence important in guidance, and nurturance inhibits most creativity because of the alienation resulting or accompanying it. Suggestions for dealing with the non-creativity of counselors are considered.

Graves, Myrna, and Thompson, J. "An Inservice Program with Teachers of Gifted Children." Gifted Child Quarterly 5: 91-92; Autumn 1961.
Describes a workshop program for inservice teachers in Sonoma County, California.

Green, D. A. "A Study of Talented High School Drop-Outs." Vocational Guidance Quarterly 10: 171-72; Spring 1962. (Cf. [pp. 389-92] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart and Winston, Inc., 1964.)
Gives account of some dropouts and adduces reasons.

Green, Leah Ann. "A Study of Creativity and the Self-Attitudes and Sociability of High School Students." Dissertation Abstracts 17: 1807-08; 1957.
Creative students had higher social confidence and attractiveness, more home advantages and did not appear withdrawn.

Greene, Margaret. "Overachieving and Underachieving Gifted High School Girls." (pp. 203-04) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.
Gifted girl underachievers show a tendency to place greater value on relationships with people than upon ideas, show greater disregard for social mores, seem to possess less ability to profit from experience, and take on more activities than they can cope with.

Greif, I. P. "An Investigation of the Effect of a Distinct Emphasis on Creative and Critical Thinking in Teacher Education." Unpublished Ed.D. thesis, Detroit, Michigan: Wayne State University, 1960. Dissertation Abstracts 22: 1885; 1961.
A direct emphasis on creative and critical thinking effects highly significant gains in general teaching ability and ability to encourage children to think in this small study.

Griffin, D. F. "Movement Responses and Creativity." Journal of Consulting Psychology 22: 134-36; 1958.
The weight of evidence is against "M" as signifying greater creative ability.

Grimes, T. W., and Allinsmith, W. "Compulsivity, Anxiety, and School Achievement." Merrill-Palmer Quarterly 7: 247-71; 1961.
Finds sustained anxiety detrimental to achievement.

Gross, N. A Study of Interpersonal Values of Pupils and Teachers as Related to Over- and Under-Achievement. Unpublished doctoral thesis, Cambridge, Massachusetts: Harvard University, in process, 1963.

Grotberg, Edith. "Adjustment Problems of the Gifted." (pp. 137-43) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.
A study of adult institutionalized superior intellect patients vs. subnormal controls with implications for education.

Grover, B. L. "Some Effects and Correlates of Different Types of Practices Used in Studying a Topic in Ninth Grade Classrooms." Doctoral dissertation, Minneapolis, University of Minnesota, 1963. Dissertation Abstracts 24: 4542; 1964.

Hypothesis that convergent thinking study questions would produce superior performance on convergent thinking and ditto for divergent thinking were not supported. Dogmatism was found negatively correlated with memory.

Gruber, H., and others, editors. Contemporary Approaches to Creative Thinking. A Symposium held at the University of Colorado. New York: Atherton Press, 1963.

Points out that creativity is researchable, but does not point to any one approach. Presents reports of six scientists: (1) Jerome Bruner illustrates concepts of creativity in his work on an "Invention Design Group"; (2) Herb Simon builds on creative process theory when writing programs for digital computers; (3) Crutchfield summarizes research on conformity; (4) Henle believes understanding of self if creative; (5) McClelland presents a psychoanalytic interpretation through interest and projective tests related to statements made about physical scientists; (6) MacLeod concludes about the book, "We think we know what we mean by creativity, but we have no firm criteria."

Gruen, W. "Utilization of Creative Potential in our Society." Journal of Counseling Psychology 1: 79-83; 1962.

Discusses reasons for interest in "achievement" and creativity in today's society. Further discusses concept that everyone in our society ought to achieve his potential. Reviews four papers: I. (Pepinsky) "Productive Nonconformity"; II. (Fiedler) "Group Climate"; III. (Gruen) "Attitudes Toward Creativity"; and IV. (Drews) "Creativity in the Schools."

Guilford, J. P. "Creativity." American Psychologist 5: 444-54; 1950. (Cf. "Three Faces of Intellect." ibid., 14: 469-79; 1959; cf. also "The Structure of Intellect." Psychological Bulletin 53: 267-93; 1956; cf. also "Factorial Angles to Psychology." Psychological Review 68: 1-20; 1961; cf. also "Frontiers in Thinking That Teachers Should Know About." Reading Teacher 13: 176-82; 1963; cf. also "Human Abilities in Education." California Journal of Instructional Improvement 1: 3-6; 1958; cf. also "An Informational View of Mind." Journal of Psychological Research 6: 1-10; 1962.)

The definitive article in the development of creativity (additions traced in the later literature). The author sees the more immediate and explorable problem in "creativity" as a double one: (1) How can we discover and (2) promote the development of creative personalities? Here, he emphasizes the factorial concept of personality as leading to a new way of thinking about creativity and creative productivity, where (a) it presents patterns of primary abilities, which can vary with different spheres of creative activity and along which individuals differ in a continuous manner, thus, allowing the nature of these abilities to be studied in people; (b) productivity depends on other primary traits, including interests, attitudes and temperamental variables.

Proposed is: "(1) an exploratory approach to creativity through a complete application of factor analysis which would begin with carefully constructed hypotheses concerning primary abilities and their properties (certain kinds of factors will be found as: sensitivity to problems, ideational fluency, flexibility of set, ideational novelty, synthesizing ability, analyzing ability); (2) these hypotheses lead to the construction of tests of quite novel types, which promise the discovery of new factors. Once these factors describe the domain of creativity we have a basis for the means of selecting individuals with creative potentialities, and know enough concerning the properties of primary abilities to facilitate education to improve and use them." A veritable blueprint of subsequent research.

Guilford, J. P. "Creative Abilities in the Arts." Psychological Review 64: 110-18; 1957.

Creative artistic talent is not unitary but made up of a large number of productive-thinking and divergent-thinking abilities such as fluency, flexibility and originality, plus others not generally regarded as creative.

Guilford, J. P., and others. "Creative Thinking in Children at the Junior High School Level." Los Angeles: University of Southern California, Psychological Laboratory, Report No. 26, 1961. (Mimeo.)

Tests of creativity developed for adults differentiated abilities of 9th graders. Little sex difference found. Selection of I.Q. above 95 did not seem to make a difference in creativity scores.

Guilford, J. P. "Potentiality for Creativity." Gifted Child Quarterly 6: 87-90; 1962a.

Divergent thinking and transformation abilities contribute directly to the structure of creative thinking. Included among the former are multiple responses appropriate to stimuli, fluency, flexibility and elaboration abilities; among the latter are re-definition, revision, and freedom from fixedness abilities. Identification of the primary mental abilities inherent in all courses of instruction, moreover, is underway. Algebra and general math courses are cited as examples. Caution is urged in generalizing from a proclivity in one area to another. Also the signs associated with creativity in the arts may be different from those associated with talent in the sciences.

Guilford, J. P. "Factors that Aid and Hinder Creativity." Teachers College Record 63: 380-92; February 1962b.

Discussion of the factors of fluency, flexibility, and originality. Ideational fluency and associational fluency are noted. Spontaneous vs. adaptive flexibility is discussed. Role of quantity of output is mentioned. Sensitivity to problems of the highly creative, and the difference between creativity and high intelligence are also elaborated as are various personality traits often found in creative people.

Guilford, J. P. "Creativity: Its Measurement and Development." (pp. 151-68) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962c.

Guilford's historic 1950 American Psychological Association address followed by a 1959 exposition of the structure of intellect.

Guilford, J. P. "Frontiers in Thinking That Teachers Should Know About." Reading Teacher 13: 176-82; 1963a.

An excellent popular presentation of the implications of the of the structure of intellect model.

Guilford, J. P. "An Informational Theory of Creative Thinking." U. S. Air Force Instructor's Journal : 1, 2, 28-33; 1963b.

(Paper presented at Western Psychological Association, 1963.)

Creativity is seen as the outcome of successful problem-solving which is a way of processing information. Various information and product abilities combine in the insight and verification stage of creativity. "If we teach understandings with logical relationships we should obtain skilled, imaginative problem solvers.

Guilford, J. P. "Intellectual Resources and Their Values as Seen by Scientists." (pp. 101-18) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963c.

The structure of intellect model and its role in problem-solving. Reports that figural adaptive flexibility (DFT), penetration (CMT), general reasoning (CMS), and symbolic redefinition (NST) were rated highest by research scientists.

Guilford, J. P. "Potentiality for Creativity and Its Measurement." (pp. 31-39) in Gardner, E. F., chairman. Proceedings of the 1962 Invitational Conference on Testing Problems. Princeton, New Jersey: Educational Testing Service, 1963d.

Considering the psychological factors found in the analysis of tests with meaningful, verbal content, the traits most clearly related to creative thinking include 3 fluency factors, 2 flexibility factors, and an elaboration factor.

Guilford, J. P. "Intellectual Factors in Productive Thinking." Los Angeles: University of Southern California, 1963e. (Mimeo.)

Sets forth a theory noting first the high degree of similarity between creativity and problem-solving. Stresses the importance of information retrieval and evaluation in both cases and links each to the structure of intellect. All kinds of thinking is required for creative performance.

Guilford, J. P., and Hoepfner, R. "Current Summary of Structure of Intellect Factors and Suggested Tests." Los Angeles: University of Southern California, Psychological Laboratory, Report No. 3, December 1963f. (Mimeo.)

Summary of the know factors of intellect with tests which load heavily on them. Gives test sources. Example: semantic adaptive flexibility (originality) may be tested by (a) clever plot titles, (b) remote consequences, (c) symbol production, (d) clever riddles.

Guilford, J. P. "Creative Thinking and Problem Solving." California Teachers Association Journal 60: 1: 8-10; January 1964a.

Discusses the role of evaluation and productive convergent and divergent thinking in creativity.

Guilford, J. P. "Basic Problems in Teaching for Creativity." Los Angeles: University of Southern California, Attitudes Research, September 1964b. (Mimeo.)

We must first decide (1) what is to be learned, (2) what it takes to be creative, (3) which qualities respond best to training. Most training should be general rather than specific. Broader aspects of intellect should be recognized. Training should include knowledge of psychology of thought. The use of a general problem-solving model using the factors of intellect is then discussed.

Guilford, J. P. "Progress in the Discovery of Intellectual Factors." (pp. 261-97) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964c.

A general account of progress in "structure-of-intellect" research to 1962 with special emphasis on the factor of divergent production. Contains appendices which make it an unusually good source article for the scholar.

Gumeson, G. G. "A Comparative Analysis of the Needs, Values, Cognitive Abilities and Other Personality Characteristics of High and Low Creative Junior College Students." Ed.D. thesis, Colorado: University of Denver, 1963. Dissertation Abstracts 24: 5527; 1964.

Creatives found more autonomous, dominant, verbally adept, aesthetically oriented and achieved significantly high GPA's. Considerable EPPS data also given.

Guthrie, J. A. "Academic Achievement Motivation Viewed in a Self Economy Context." East Lansing: Michigan State University, 1961. (Mimeo.)

A speech in which Guthrie points out that achievement will take place when it is more satisfying and rewarding than other forms of activity.

Haag, C. H. An Exploratory Study to Determine the Significance of Early Longitudinal Records of Ability and Achievement as Predictors of Academic Achievement in College. Ann Arbor: University of Michigan, 1961. Dissertation Abstracts 20: 3702; 1961.

Scores from S-B and Stanford Achievement Tests prior to 7th grade were found significantly related to GPA and account for 50% of variance.

Hackett, H. R. "Use of MMPI Items to Predict College Achievement." Personnel and Guidance Journal 39: 215-17; November 1960.

Found high-achieving men more verbal, project less, discriminate better, less easily aroused emotionally, tolerate tension better, and live at a relaxed tempo. Found similarities between low achievers and authoritarian personality. Gives item numbers for under-achiever scale.

Haefele, W. Creativity and Innovation. New York: Reinhold Publishing Corp., 1962.

Hall, G. V. "Programs for the Benefit of Able Students." Education 79: 28-33; September 1958. (Cf. Clearing House 30: 517-19; May 1956.) Also California Journal of Secondary Education 34: 342-44; October 1959.

San Diego superintendent describes honors courses and experimental program for able.

Hall, Mildred E. "The Effects of Individual Counseling on Selected Groups of Underachieving Students of High Ability." Unpublished Ed.D. thesis, University of Southern California, 1963. Dissertation Abstracts 24: 623; 1964.

Counseling did not improve underachievers who were found to be less able readers.

Hall, R. A Follow-up of Under- and Over-Achievers. Unpublished doctoral thesis, Norman: University of Oklahoma, in process, 1963.

Hallman, R. J. "The Commonness of Creativity." Educational Theory 13: April 1963a.

Creative capacities (1) exist potentially or actually in every child; (2) are not limited to the very rare talent ascribed to genius; (3) are identical to those which move the personality in the direction of psychological health; (4) rest on biological processes; and (5) are amenable to environmental influences. Thus, they imply that creativity can serve as a worthy aim of education.

The thesis of this paper is that unless creativity can be established as existing commonly in all children, it can never serve as a proper aim of education. "Writers in the field suggest 3 possible solutions to the question of range in creative abilities: (1) difference in ability is quantitative, not qualitative; (2) any difference reduces to a matter of latency, as against an overt expression; or (3) the differential tends to disappear when creativity is defined as a way of conducting one's life rather than in terms of the number and kinds of objects one may have produced."

Hallman, R. J. "The Necessary and Sufficient Conditions for Creativity." Journal of Humanistic Psychology 3: Spring 1963b.

Lists 5 necessary and sufficient conditions: connectedness, originality, nonrationality, self-actualization, and openness.

Hallman, R. J. Implications of Creativity for Philosophies of Education. Unpublished Ed.D. thesis, Claremont, California: Claremont Graduate School, 1964.

The educational philosophies of realism, idealism, and Neo-Aristotelianism are logically inconsistent with principles of creativity and cannot support it. The naturalistic humanism of Dewey does, however.

Hamilton, J. T. Provisions for Superior Pupils in Selected Ohio Junior High Schools. Unpublished doctoral thesis, Cleveland, Ohio: Western Reserve University, 1963.

Hammer, E. F. "Emotional Instability and Creativity." Perceptual Motor Skills 12: 102; 1961.

A study of relationships between Rorschach and creativity vs. facility in 18 art students.

Hampton, Nellie. "Effects of Special Training on the Achievement and Adjustment of Gifted Children." Washington, D. C.: U. S. Office of Education (OE-35031), Cooperative Research Program Project No. 423, 1959.

Descriptions and evaluation of a summer school for gifted children.

Hanson, E. H. "Finding Creative Children." Education 86: 510, April 1964.

Short article gives breakdown of 10,000 Rock Island children by I. Q. and creativity as judged by teachers. There were 1,200 high I. Q., high creatives; 1,100 high I. Q., low creatives; and 400 low I. Q., high creatives.

Harding, H. F. "The Need for a More Creative Trend in American Education." (pp. 3-8) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.

A speech in which the need for a more creative trend in American education is made.

Harmon, L. R. "The Development of a Criterion of Scientific Competence." (pp. 44-52) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

Discussion of criteria in selecting national research fellows.

Harmon, L. R. "Progress and Potentiality: Career Determiners of High-Level Personnel." (pp. 187-202) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

From the evidence of various demographic studies of the production of Ph.D.'s, conclusion is drawn that under proper facilitation we could vastly speed up process of getting Ph.D. and have many more. Hurdles of women, rural youth, and minority groups are noted.

Harper, E. H., and Plowman, P. D. "Criteria for Determining Excess Expense for Mentally Gifted Minor Programs." Sacramento: California State Department of Education, 1963. (Mimeo.)

A manual for determining excess expense incurred by school districts for gifted child programs. Defines expense, participating pupil, mentally gifted minor, gives examples of legitimate expenses, and costs by type of program.

Harris, D. H., Jr. "The Development of a Test of Creativity in Engineering." Dissertation Abstracts 20: 2374; 1959.

Two forms of a 20-item test were developed using 345 engineering students at Purdue University. No reliability data given.

Harris, K. F. "What Can You Do for the Academically Talented in Smaller Schools?" Research Bulletin 4, New York State School Boards Association, June 1962. (Cf. [pp. 281-88] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

A review of some procedures found useful in similar and rural schools. After school and Saturday program is discussed.

Harrison, Edna. "The Counselor's Role in the Early Identification of Gifted Children." Personnel and Guidance Journal 39: 735-38; May 1961.

Rather general statement of elementary school guidance functions in identification of able children, and in relation to parents and teachers.

Harrison, Edna. "The Elementary School Counselor and the Gifted Underachiever." Personnel and Guidance Journal 41: 716-19; April 1963.

A general discussion of counselor's responsibilities with child, parents, and teachers. In counselor's work with teachers it points out need to: (1) gain rapport; (2) accept teachers' needs for elevating children of lesser ability to top; (3) tactfully pointing out differences between giftedness and high average achievement; (4) placing before teachers articles as needed; and (5) helping solve problems encountered with children of high capacity.

Hart, Anna. "A Study of Creative Thinking and its Relation to Nursing." Unpublished Ed.D. thesis, Bloomington: Indiana University, 1962. Dissertation Abstracts 23: 4323; 1963.

Very little relationship found between Torrance's tests and supervisor's ratings.

Hart, D. H. "A Study of the Effects of Two Types of Group Experiences on the Academic Achievement of College Underachievers." Ed.D. thesis, Colorado: University of Denver, 1963. Dissertation Abstracts 25: 1003; 1964.

Differences between cognitive experiences (emphasis on problem areas) and affective (emphasis on personal problems) showed greater gains by the latter group during the current semester, but none in the semester following counseling.

Hatch, W. R., and Bennet, Ann. Independent Study. (New Dimensions in Higher Education No. 1.) Washington, D. C.: U. S. Office of Education (OE-50005), 1960.

Brochure of 40 pages on honors programs, scope of independent study (with a good bibliography), context, economics, and research needed.

Haven, G. A., Jr. Creative Thought, Productivity, and the Self-Concept. Unpublished doctoral thesis, Minneapolis: University of Minnesota, 1962.

Havighurst, R. J. "Conditions Productive of Superior Children." Teachers College Record 62: 524-31; April 1961. (Cf. [pp. 137-47] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

A sociological approach to the problem of increasing the supply of mentally superior children through social engineering including: (1) enriching the cultural environment, (2) increasing guidance services, (3) stressing achievement drive in early years, (4) identifying "divergent thinkers," and so forth.

Hayes, D. G., and Rothney, J. W. M. "Educational Decision-Making by Superior Secondary School Students and Their Parents." Personnel and Guidance Journal 38: 26-30; September 1960.

Ninth grade superior students prefer to make their own decisions on educational matters but their fathers prefer to make these choices themselves. Conferences between teachers, counselors, parents and pupils appear necessary.

Hazlett, P. H. An Evaluation of the Advanced Placement Program. Unpublished doctoral thesis, Cambridge, Massachusetts: Harvard University, in process, 1963.

Heffernan, Helen, and Rice, J. P., Jr. "A Proposed Individual Placement Project for Academically Talented Pupils in Elementary Schools." California Schools 34: 3-11; January 1963.

A proposed framework for acceleration which would allow elementary gifted students to accelerate one to two years without missing any learning experience.

Helton, B. A Comparative Analysis of Selected Characteristics of Intellectually Superior Male Students Who Persist and Those Who do not Persist in an Advanced Placement Program. Unpublished doctoral thesis, Denton: North Texas State University, in process, 1963.

Hendrix, Gertrude. "Learning by Discovery." The Mathematics Teacher 54: 290-99; May 1961.

A discussion of the discovery method in the UICSM Mathematics Project at the University of Illinois.

Henle, Mary. "The Birth and Death of Ideas." (pp. 31-62) in Gruber, H. E., and others, editors. Contemporary Approaches to Creative Thinking. New York: Atherton Press, 1963.

Discusses the characteristics of creative thinking: correctness, novelty, freedom, and harmony; also the conditions required: receptivity, immersion, seeing questions, utilization of errors, and detached devotion. Illustrates examples of creative thinking in lives of eminent and from literature.

Henrickson, P. R. "Non-Verbal Manipulation and Creativeness in Art." Studies in Art Education 5: 60-70; 1963. (Cf. idem 2: 36-44; 1961.) (From his doctoral thesis, Minneapolis: University of Minnesota, 1962.)

"Greater than average productivity has been considered (Torrance 1959, 1962) one of the distinctive characteristics of creative persons." Results of this study indicate that creative achievement in a given area is related to the subjects' choice to limit fluency of expression in favor of greater manipulation or elaboration of a limited number of products.

Herron, E. W. "Intellectual Achievement-Motivation: A Study in Construct Clarification." Madison: University of Wisconsin, 1964. (Mimeo.)

The Holtzman Inkblot Technique, the French Test of Insight and a questionnaire were administered to 180 students under either relaxed or achievement arousal conditions. Hypothesis relating n-achievement to other variables were not confirmed.

Hersch, C. "The Cognitive Functioning of the Creative Person: A Development Analysis." Journal of Projective Technics 26: 193-200; 1962. (Cf. Dissertation Abstracts 18: 296; 1958.)

Findings support the hypothesis that both relatively mature and primitive processes are more available to the creative individual as compared with non-creative normals. Primitive operations among creators are more adaptive and capable of productive expression while primitive thinking among schizophrenics serves pathological ends.

Herson, J. L., II. Parental Personality and the Adjustment Status of Intellectually Superior Adolescents. Unpublished doctoral thesis, Charlottesville: University of Virginia, in process, 1963.

Heyl, Helen Hay. "Learning Characteristics and Problems of Gifted Children." Curriculum Adaptations for the Gifted. Albany: New York State Department of Education, 1958. (Reprinted in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.)

Gifted children have special needs. These include:

1. The need to learn tolerance for and patience with other persons less intellectually gifted than themselves. They must learn that persons can be valued for reasons other than intellectual.
2. They must learn to express themselves in terms which are understandable to less intellectually endowed persons.

Higgins, C. "Identification and Education of the Academically Talented in the Albany Public Schools." Progress Report. Albany, New York: Albany Board of Education, Learning Research Center, Gaffin School (274 South Pearl Street, Albany, 12202), July 1960. (Cf. idem July 30, 1961.)

Copious statistical breakdown of identification methods and achievement evaluation of the Albany Project.

Higgins, C. "Multiple Predictor Score Cut-Offs in Selection of Academically Talented Children in Grade 3." 20th Yearbook of the National Council on Measurement in Education 153-64; 1963.

"In most instances, multiple regression cut-offs were found to yield higher true positive-negative and lower false positive-negative predictions than did the multiple prediction cut-offs. The relation of cut-offs to a community's value system was discussed."

Higges, H. H., and Converse, H. D. "Characteristics of the Gifted: A Case for a Sequel to Terman's Study." Exceptional Children 28: 179-83; December 1962.

Weakness in method in the Terman study and lack of identification of gifted underachievers point to need for new longitudinal study say authors.

Hillery, M. C. Dimensions of Creativity: An Identification, Description, and Synthesis of Prevalent Concepts and Dimensions of Creativity. Unpublished doctoral thesis, East Lansing: Michigan State University, in process, 1963.

Hine, Willa. Creativity as a Factor in the Development of Problems for Some Children in the Learning Situation. Unpublished doctoral thesis, Colorado: University of Denver, in process, 1963.

Hlavaty, J. H., editor. Mathematics for the Academically Talented Student in the Secondary School. Washington, D. C.: National Education Association, 1959.

This report on a conference sponsored jointly by the National Education Association Project on the Academically Talented Student and the National Council of Teachers of Mathematics discusses the problems of finding and making provisions for the mathematically talented. Included are general suggestions on enrichment and a bibliography of reference and enrichment materials.

Hobson, J. R., and others. "How Research on Intellectually Gifted Children Can be Done." University of Kansas Bulletin of Education 16: 107-16; May 1962.

Rewrite from pp. 24-29 of Research on Academically Talented Student stresses need for national scope.

Hobson, J. R. "A Failure in Retrospect." Psychology in the Schools 1: 285-87; July 1964.

Former Brookline superintendent uses failure of special classes for gifted to illustrate need for total school planning and enlistment of teachers aid in such a program.

Hoch, O. "Improving the Present Status of the Creative Student." The High School Journal 46: 2-13; October 1962.

Need for more attention to the creative individual is stressed. (25 citations.) (Part of a symposium.)

Hoedt, K. C., and Rothney, J. W. M. "Guidance for Superior Students." Vocational Guidance Quarterly 11: 199-202; Spring 1963.

There is need for guidance, but principals are not behind it solidly, and lack of training among counselors is evident.

Hoffa, H. E. The Relationship of Art Experience to Some Attributes of Conformity. Unpublished doctoral thesis, University Park: Pennsylvania State University, 1959.

Hoffman, L. R., and Maier, N. R. F. "Quality and Acceptance of Problem Solutions by Members of Homogeneous and Heterogeneous Groups." Journal of Abnormal Social Psychology 62: 401-07; 1961.

Heterogeneous groups proved better at problem-solving with mixed sex groups than all male groups.

Hoffman, L. R., and others. "Does Training with Differential Reinforcement on Similar Problems Help in Solving a New Problem." Psychological Report 13: 147-54 1963.

Negative reinforcement found on Maier's hatrack problem.

Holland, J. L. "Some Limitations of Teacher Ratings as Predictors of Creativity." Journal of Educational Psychology 50: 219-23; 1959.

Teacher ratings are more accurate and useful in predicting achievement than creativity.

Holland, J. L. "A Problem of Research on the Identification, Motivation, and Training of Talented Students." Technical Report No. 5. Evanston, Illinois: National Merit Scholarship Corporation, June 1961a. (Mimeo.)

Report of 1960-61 reviews research studies of the National Merit Scholarship Corporation group in (1) identification of talent, (2) conservation of talent, (3) educational influences, (4) vocational goals. Give staff, bibliography, and an excellent summary of projects plus over-all view.

Holland, J. L. "Creative and Academic Performance Among Talented Adolescents." Journal of Educational Psychology 52: 136-47; 1961b.

An exploration of the nature of academic achievement and creative behavior in adolescents and young adults. Academic performance appears to be the function of a personal syndrome characterized by: perseverence, self-control, good behavior, rigidity. Creative performance seems to be the outcome of a conscious conception of being original, actively participating in creative hobbies. Academic achievement involves different motives than creative performance.

Holland, J. L., and Astin, A. W. "The Prediction of the Academic, Artistic, Scientific, and Social Achievement of Undergraduates of Superior Scholastic Aptitude." Journal of Educational Psychology 53: 132-43; 1962a.

Study relates student's attributes as manifested in high school to his college achievement over the four-year period. Study designed to ascertain what attributes are associated with achievement in areas of: artistic achievement, scientific achievement, scholastic achievement, social achievement. Academic achievement correlates highly with: self-control, persistence, socialization, and super-ego strength. Artistic and scientific achievement correlates highly with scientific and artistic vocational interest, originality. The best single predictor of any achievement is similar achievement in high school.

Holland, J. L., and Astin, A. W. "The Need for Redefining 'Talent' and 'Talent Loss,' " Journal of Higher Education 33: 77-82; February 1962b.

Proposes that talent should be defined in terms of talented performance. Talent loss should be viewed as the non-utilization of those personal capacities which are necessary for the occurrence of socially significant performance. Procedures for studying talent should include: (1) specifying the criterion; the talented performance which is considered important, (2) identifying individuals who have contributed outstanding performance in the field, (3) determine, with the use of control groups, those personal attributes (talent) and life experiences (opportunity) which are related to the talented behavior, (4) to test the most promising predictors in longitudinal studies.

Holland, J. L. "The Prediction of Academic and Extra-Curricular Achievement in College." Evanston, Illinois: National Merit Scholarship Corporation, 1963a. (Mimeo.)

Multiple regression analysis of various predictors of Merit Finalists indicate that past performance predicts future performance, and that a student's achievements are correlated with his interests, goals, and self-concept.

Holland, J. L., and others. "A Research Program on Talented Students." Journal of College Student Personnel 4: 144-50; March 1963b.

National Merit Scholarship Corporation research of their scholarship winners as concerns the characteristics of students in the Merit program, the students' choice of a particular college, the nature of the college, and the achievement, vocational choice, talent loss and personal development which results from student-college interaction. Results of longitudinal studies are cited. Good bibliography included.

Holland, J. L., director. "A Program of Research on the Identification, Motivation, and Training of Talented Students." Technical Report No. 7. Evanston, Illinois: National Merit Scholarship Corporation, June 1963c. (Mimeo.)

Report of research activities from July 1962-June 1963. Research program covers the following areas:

1. The identification of talent.
2. The conservation of talent.
3. Educational influences.
4. Vocational goals: their origins and development.
5. Personal development and mental health.
6. Miscellaneous descriptive, methodological, and editorial reports.

Holland, J. L. "The Selection of Students for Special Scholarships." Journal of Higher Education 35: 32-37, 1964a.

Merit scholarship students were selected under four experimental programs: (1) outstanding creative promise. (2) single subject ability, (3) high financial need, (4) early college entrance. Subsequent academic performance of groups 1 and 2 was as high as regular controls. Group 3 did worse and group 4 did better than the typical scholar. Extracurricular achievements of groups 1 and 4 were superior.

Holland, J. L. "The Assessment and Prediction of the Creative Performance of High-Aptitude Youth." (pp. 298-315) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964b.

A general account of the recent research of the National Merit Scholarship Corporation in investigating the conservation of talent, influence of colleges, vocational behavior and personal development of merit scholars.

Hollister, W. G., and Chandler, Caroline. "When Feeling Storms Becloud the Learning Process." NEA Journal 51: 8: 18-20; November 1962.

Discusses the contribution to underachievement caused by emotionally disturbed children. (Part of a symposium on underachievement.)

Holmes, H. W. "Pity the Gifted." Educational Forum 22: 193-201; January 1958.

Compares the thinking on the gifted in the United States and Russia; attempts to sift out those parts of the Soviet system which could be adjusted to benefit ours. Emphasis given to the idea that one must help the gifted gain a deeper concern for their fellow man.

Hosford, P. M. "Characteristics of Science-Talented and Language-Talented Secondary School Students." Unpublished Ed.D. thesis, Athens: University of Georgia, 1961. Dissertation Abstracts 22: 2687; 1962.

Personality and interest test differences between the two groups (by sex) are displayed.

Houston, J. P., and Mednick, S. A. "Creativity and the Need for Novelty." Journal of Abnormal Social Psychology 66: 137-41; 1963.

An experiment designed to demonstrate the reinforcing properties of associative novelty for creative subjects. Sixty undergraduates were separated into high (HC) and low (LC) creativity groups on the basis of their scores on the Remote Associates Test. Subjects were then presented with a series of pairs of words (each pair containing a noun and a non-noun) and asked to choose the word they preferred. The choice of a noun was followed by a novel association to that noun. Non-noun choices were followed by common associations. The HC group significantly increased and the LC group significantly decreased the frequency of their noun choices over the series of pairs. The results support the need for novelty hypothesis.

Hovary, D. E., and others. "Effects of Self-directed Study on Achievement, Retention and Curiosity." Journal of Educational Research 56: 346-51; March 1963.

Using two equal classes in Education Psychology, self-directed group were superior in curiosity, but no difference was found in total mastery of subject.

Hutchinson, M., and Young, C. Educating the Intelligent. London: Penguin Books (Pelican Series A566), 1962.

British view of special education in 12 chapters and 250 pages stresses curriculum and other reforms.

Huston, Isabelle Chambers, and McLelland, Isabel C. "Classroom Enrichment." Education 80: 161-63; November 1959. (Cf. Education Digest 25: 30-31; February 1960.)

A report on the enrichment program at Portland, Oregon, that attempts to provide a broader range of activities, interests, opportunities, and experiences for the gifted and talented child. Specific examples of what was done by superior students at all grade levels are given.

Hyman, R. "On Prior Information and Creativity." Psychological Report 9: 151-61; 1961.

Tries to answer the question: "How is the way you solve problems influenced by knowing what others have done?" in an industrial setting.

Hyman, R. "Creativity and the Prepared Mind: The Role of Information and Induced Attitudes." (pp. 69-79) in Taylor, C.W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

Under what conditions does information help us to be creative and when does it stifle creativity? Emphasizes induced individual changes, immediate results and open-end problems.

Isaacs, Ann, and others. "State Programs for the Gifted." Gifted Child Quarterly 4: 62-65; Fall 1960.

Bixler reports on the North Carolina program, Ward tells of the Southern Regional Project, and Isaacs gives a brief overview of programs in 11 states.

Isaacs, Ann "Sources of Motivation in Creatively Gifted Adults." Gifted Child Quarterly 5: 63-64; 1961.

Parents, teachers, and classmates were of greatest influence to the group of artists, authors, and composers interviewed. Insight came at different ages: for the artists between 5 and 22; for the musicians between 4 and 23; and for the writers between 12 and 40. The war, school papers and merit awards were forces which shaped their destinies. Some obstacles met were time limitations for creativity, insufficient pay and rejection by the public.

Isaacs, Ann. "Should the Gifted Preschool Child be Taught to Read?" Gifted Child Quarterly 11: 72-75; Summer 1963a.

Good review of preschool reading practices, plus early entrance procedures emphasizes that early stimulating is generally helpful. (35 references.)

Isaacs, Ann. "Administrative Guides for Helping Gifted Children." Cincinnati, Ohio: National Association for Gifted Children (8080 Springvalley Drive), 1963b.

Address before administrator's group features scorecard for evaluating administrative efficiency in programs for gifted.

Isaacs, Ann. "School Programs for the Gifted, Successes and Failures." Gifted Child Quarterly 8: 140-44; Autumn 1964a.

Discusses reasons why some programs succeed and others fail.

Isaacs, Ann. "Some Observations about Gifted Women and Higher Education." Cincinnati, Ohio: National Association for Gifted Children (8080 Springvalley Drive), 1964b. (Mimeo.)

A plea for more flexibility in education, career planning, and guidance for bright young women.

Isaacs, Ann. "The Gifted Child in the Primary Grades." Cincinnati, Ohio: National Association for Gifted Children (8080 Springvalley Drive), 1964c. (Mimeo.)

Isaacs, Ann. "Guides for the Administrator Who Would Help Gifted Children." Cincinnati, Ohio: National Association for Gifted Children (8080 Springvalley Drive), 1964d.

Practical suggestions for administrators starting a program.

Isaacs, Ann. "Role Expectancy and Its Effect on Performance and Achievement among Gifted Students." The High School Journal 48: 107-16; November 1964e.

To perform, able students need models with which to identify, accepting parents and teachers, and a public climate which encourages originality.

Iscoe, I. "'I Told You So': The Logical Dilemma of the Bright Under-achieving Child." Psychology in the Schools 1: 282-04; July 1964.

Parents who tell former underachievers: "I told you so" destroy their initiative by taking the credit away from them.

Ivanoff, J. M., and Pinckney, G. "High School University Credit for Nebraska's Gifted." Vocational Guidance Quarterly 9: 133-38; Winter 1960.

Details in-service approach of University of Nebraska which allows college credit for courses in high school in certain cases.

Jablonski, J. R. "Developing Creative Research Performance in Public School Children." (pp. 203-19) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

A description of the facilitating environment developed towards science by the Pittsburgh schools under a grant.

Jackson, D. M., and Rogge, W. M. "Five Proposals for Gifted Children." Illinois Education 25: 197-200; January 1963. (Cf. [pp. 288-98] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

A recommendation to the Illinois legislature for guidelines for a state program.

Jacobs, W. J. "A Program in American Intellectual History for the Academically Talented in the Twelfth Grade." Unpublished Ed. D. thesis, New York: Columbia University, 1963. Dissertation Abstracts 24: 5245; 1964.

Curriculum units based on key concepts.

Jacobsen, T. L., and Asher, J. J. "Validity of the Concept Constancy Measure of Creative Problem Solving." Journal of General Psychology 68: 9-19; 1963.

An empirical study of the concept constancy construct of Asher's neo-field theory of creativity is reported, in which the Concept Constancy Test, comprising 5 measures, each of which consisted of a series of 20 drawings that began with an established concept which was gradually transformed into another concept, was used. Scoring was based on the point at which each of the 85 subjects perceived the outcome of each of the transitions. Performance on the test was correlated with performance on four creativity criterion measures. In all instances, the results indicated a significant relationship well beyond the .01 level. The following three creativity predictors were also employed for comparison, but none achieved significance at the .05 level: (a) Intelligence (ACE or College Qualification Test total scores, (b) academic achievement grade-point averages, and (c) the Consequence Test by Christensen, Merrifield, and Guilford.

James, Katherine. The Preparation of Teachers for the Gifted in the Elementary Schools with Special Reference to the Southern Connecticut State College. Unpublished Ed. D. thesis, New York: New York University, 1960. Dissertation Abstracts 20: 3005; 1961.

Discusses programs at Hunter College; Kent State University; Pennsylvania State University; Newark State College; University of Pittsburg; and others. Followed by course recommendations for Southern Connecticut State College which include psychology, materials, techniques of teaching gifted, reading, mathematics, science, and experience in student teaching with gifted students.

Jennings, C. J. "Personal Construct Theory and the Creativity Cycle." Unpublished Ph.D. thesis, Columbus: Ohio State University, 1963. Dissertation Abstracts 24: 4797; 1964.

Defining the creativity cycle as loosening during search and tightening during evaluation, it was found that poems constructed on a basis of both parts of the cycle were superior to either part alone.

Jeter, M. V. "A Study of the Characteristics of Mentally Superior Achievers and Underachievers on Reading at the Fourth, Fifth and Sixth Grade Levels." Unpublished Ed.D. thesis, Tallahassee: Florida State University, 1963. Dissertation Abstracts 24: 1095; 1964.

Achievers read more and better books, watch less television, consider C a failing grade, have a regular place to study, have their own room, have their own personal library, come from high cultural-level homes, have parents who attended college more often than underachievers.

Jex, F. B. "Negative Validities for Two Different Ingenuity Tests." (pp. 299-301) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its recognition and Development. New York: John Wiley & Sons, Inc., 1963.

Reports negative validities for two ingenuity tests compared with principal's ratings of teachers.

Johnson, R. T. "The Growth of Creative Thinking Abilities in Western Samoa." Unpublished Ed.D. thesis, Minneapolis: University of Minnesota, 1963. Dissertation Abstracts 24: 1922; 1964.

Creativity slump in U. S. 4th graders not found here. Concludes that conditions for arousal of high creative level include: (a) reduction in cultural discontinuity, (b) variety of sensory stimuli, (c) cultural rewarding of creative enterprise.

Jones, C. A. "Some Relationships Between Creative Writing and Drawing of 6th Grade Children." Unpublished Ed.D. thesis, University Park: Pennsylvania State University, 1961. Dissertation Abstracts 22: 158; 1961.

Relationship between specific criteria judgments in both creative writing and drawing supports theory of common attributes. Also found relationship between Guilford semantic and figural divergent productions.

Jones, C. A. "Relationships Between Creative Writing and Creative Drawing of Sixth Grade Children." Studies in Art Education 3: 34-43; Spring 1962.

Major findings of this study are: (1) the relationship between creative writing and creative drawing as measured by specific criteria. Judgments of the creative expression were found to be low, positive and significant at the .01 level, indicating there are common attributes of creativeness in the art, and (2) the relationships between the semantic divergent-production tests and the figural divergent-production tests advanced by Guilford were found to be moderate and significant at the .01 level, suggesting that the two test batteries do function as suitable predictors. However, there appears to be a dependent relationship, which may mean that the two test batteries are better able to predict general creativity in a specific area.

Joseph, E. A. "Guidance May Become Residual for the Gifted." Gifted Child Quarterly 8: 115-16; Autumn 1964.

Attacks the trend to integrating guidance functions with a subject teacher on grounds that it destroys chance for real subject content as well as distorts guidance role.

Joseph, M. P. "Use of Depth Interviewing to Explore the Motivational Factors Underlying Achievement of Eleventh Grade Boys." East Lansing: Michigan State University, 1961. (Mimeo.)

With N=5, results questionable, but study interesting for methods and tools used.

Joyner, Sara. Creativity in Education: A View of its Importance and Nurture. Unpublished Ed.D. thesis, New York: Columbia University, 1963. (Microfilm 64-7199.)

Library research proposes interdisciplinary approach towards creativity which is regarded as basic to art experience. Suggests specific educational practices to enhance creativity such as diagnostic group action, more art and general education.

Justman, J. "Some Unmet Problems in the Education of the Gifted." Exceptional Children 26: 436-41; April 1960. (Cf. [pp. 48-56] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

Problems yet to be solved include better communication of good school programs for the gifted, perhaps thru a "clearing house"; a greater degree of standardization in definition of giftedness; early identification, including that of the underachiever; questioning value of present practices of grouping; a "different" approach to course content and methodology than just enrichment, and better financing of special programs of education for the gifted.

Kahn, Phyllis. "Education of the Academically Talented Gifted: A Trojan Horse?" Bulletin of the National Association of Secondary-School Principals 47: 287: 22-25; December 1963.
Polemic against education of gifted children.

Kaplan, N. "The Relation of Creativity to Sociological Variables in Research Organization." (pp. 195-204) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.
A discussion of the relation between free time, institutional control, working relationships and creativity.

Kariger, R. H. The Relationship of Lane Grouping in the Socio-economic Status of the Parents of Seventh Grade Pupils in Three Junior High Schools. University Microfilms, Inc., 63-3723.

Karnes, M. B., and others. "Underachievement and Overachievement of Intellectually Gifted Children." Exceptional Children 28: 167-76; December 1961.

With 223 gifted children yielding 41 over- and under-achievers (on basis of + or - 1 S. D. discrepancy score) this study of the Illinois Department of Special Services tested 7 hypotheses with regard to parental relations, peer relations and self concept of gifted children via the PARI, peer relationship and creativity tests. Two only were substantiated: OA's see themselves more accepted than UA's, and OA's are more creative than UA's. Not proved were hypotheses re parental climates, favorable attitudes towards children, more parental acceptance, better self concept, and greater social maturity.

Karnes, M. B., and others. "The Efficacy of Two Organizational Plans for Underachieving Intellectually Gifted Children." Exceptional Children 29: 438-46; May 1963a.

Compared 25 underachieving elementary students in homogeneously grouped classes (A) with ditto in heterogeneously grouped classes (B). Group A made greater academic gains and creative gains, and in parental acceptance, but not in peer acceptance.

Karnes, M. B., and others. "The Effects of Typing Instruction on Creativity and Achievement Among the Gifted." Champaign, Ill.: Champaign School Districts, 1963L.

The gains in creative thinking and writing for the typing group were significant.

Karowe, H. E. "Giftedness and Creativity." Gifted Child Quarterly 7: 165-75; Winter 1963.

An address which seeks to distinguish between giftedness and creativity.

Kasza, W. J. The Effects of Praise and Criticism on the Creative Drawings of Fifth-Grade Children. Unpublished doctoral thesis, University Park: Pennsylvania State University, 1961.

Found praise facilitated drawings and creativity significantly more than blame.

Kazienko, L. W. "Beginner Grade Influence in School Progress." Educational Administration and Supervision 40: 219-28; April 1954.

Compares the achievement of children who start in beginner classes at five years of age with children who start in the first grade when they are five. Beginner class is defined as pre-first grade experience in rural schools where kindergarten is not feasible. Significant differences in achievement were found to exist as soon as the fourth grade.

Keener, B. O., and Cope, D. A. "Nurturing the Creative Response." Gifted Child Quarterly 5: 57-62; Summer 1961.

Gives the items of an inventory of 35 items designed to identify personal and social factors connected with ability and creativity in the visual arts.

Keiler, M. L. "Creativity the Core of Art Education." Educational Leadership 18: 28-32; October 1960.

Discusses contribution of art to creativity, including problem solving, spontaneity, and multiple solutions. (Part of a symposium.)

Kelley, R. "Enrichment in High School Science and Mathematics." Gifted Child Quarterly 6: 111-14; Autumn 1962.

Suggestions for the enrichment of mathematics programs.

Kelley, R., supervisor. Advanced Placement Program: Your Opportunity. Albany, New York: New York State Department of Education, May 1963.

Brochure produced for the use of guidance personnel in acquainting students and parents with opportunities in the Advanced Placement Program.

Kelley, R., supervisor. Education for the Gifted in New York State. Albany, New York: New York State Board of Education, 1964.

Summarizes a comprehensive survey of education for the gifted. Covering K-12, it describes a number of programs, location, cost, identification, curriculum, marking, program evaluation, etc.

Kelly, R. H. "Secondary School Programs for Intellectually Gifted Pupils, Los Angeles." (pp. 348-49) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.

Secondary program description. For others see ibid., pp. 350-87.

Kennedy, W. A. "MMPI Profiles of Gifted Adolescents." Journal of Clinical Psychology 18: 148-49; 1962.

An analysis was made of MMPI profiles of 100 gifted adolescents. No scaled T scores were above 70 for either males or females. Significant intercorrelations between scales were given. The general profile for the gifted was within normal limits.

Kennedy, W. A., and others. "Wechsler Profiles of Mathematically Gifted Adolescents." Psychological Reports 12: 259-62; 1963a.

WAIS IQ means on 130 S were 138 verbal, 125 performance, and 135 full. The group averaged 2 z's up on all verbal scales except digit span was +1. Correlation between WAIS performance and S-B was non-significant. Verbal and performance subscales correlated within but not between groups, altho both groups contributed equally to full scale IQ.

Kennedy, W. A., and Smith A. H. "Norms for Mathematically Gifted Adolescents on the Concept Mastery Test." Perceptual and Motor Skills 17: 698; 1963b. Also Psychological Abstracts 38: 6059; 1964.

Norms for 150 11th graders with mean IQ of 139 are given. M=96, SD=40.

Kern, H. "Motivating the Pupil's Creativity in the Classroom." California Journal of Secondary Education 34: 263-68; May 1959.

Key to motivation is in provoking students to think on their own.

Kerr, D. The Advanced Placement Program: A Study at the Operational Level in Twelve Selected Schools. Unpublished doctoral thesis, New York: Columbia University, in process, 1963.

Ketcham, W. A. "What Do We Know About Gifted Children." High School Journal 48: 82-87; November 1964.

Nicely researched article describes some characteristics of the able and their educational implications.

Ketcherside, W. J. "Creative and Adjustment Factors Involved in Educational Development Beyond Expectancy." Doctoral dissertation, Columbia: University of Missouri, 1963. Dissertation Abstracts 24: 4545; 1964.

Creative thinking appears to be a significant factor in educational development beyond expectancy in case of normal 10th graders.

Kheiralla, S. M. H. "The Relationship Between Creativity and Intelligence, Achievement, Physical Growth, and Certain Personal Traits." Ed.D. thesis, Ann Arbor: University of Michigan, 1963. Dissertation Abstracts 24: 2360; 1964.

A study of 108 students in grades 4-12 of a laboratory school suggests that highly creative children vary much in their intellectual and personality characteristics.

Kiepper, J. J. "Schools Cooperating in a Fine Advanced Program in English." Clearing House 38: 245-52; December 1963.

A description of how five high schools unable to provide advanced placement banded together with a private school to give extra opportunity to gifted students.

Killian, C. D. Practices in Teaching the Superior and Gifted--Final Report. Cullowhee: Western Carolina College Guidance Clinic, 1963.

Prime mover of Cullowhee Program explains procedures; 274-page booklet outlines distinctive summer camp program and other material.

Kimbrel, D. L. Factors Influencing Ascriptions of Creativity and Other Properties to Art Objects. Unpublished doctoral thesis, Austin: University of Texas, 1962.

Kincaid, C. The Determination and Description of Various Creative Attributes of Children. Unpublished doctoral thesis, University Park: Pennsylvania State University, 1960.

Klausmeier, H. J., and Feldhusen, J. F. "Retention in Arithmetic Among Children of Low, Average and High Intelligence at 117 Months of Age." Journal of Educational Psychology 50: 88-92; April 1959.

Purpose of study was to test hypothesis that retention of arithmetic learning is the same among children of low, average and high intelligence when the original task is graded to the learners achievement level. Using analysis of co-variance concluded that retention is the same for the three groups as hypothesized.

Klausmeier, H. J., and Loughlin, L. J. "Behaviors during Problem Solving among Children of Low, Average and High Intelligence." Journal of Educational Psychology 52: 148-52; 1961. Also (pp. 279-82) in Ripple, R. E., editor. Readings in Learning and Human Abilities. New York: Harper & Row, 1964.

High IQ children noted and corrected more of their own mistakes, verified more solutions, used more logical methods, made fewer useless moves.

Klausmeier, H. J., and Ripple, R. E. "Effects of Accelerating Bright Older Pupils from Second to Fourth Grade." Journal of Educational Psychology 53: 93-100; 1962a.

Second graders who were superior (SLA) and above the median CA attended a 5-week summer session to pick up 3rd grade skills and then accelerated to 4th grade.

Acceleration not harmful. The only observed negative effect was relatively lower peer acceptance for the accelerated boys. Subsequent research will determine if this decrease was only temporary.

Klausmeier, H. J., and others. "Relationships Between Divergent Thinking Abilities and Teacher Ratings of High School Students." Journal of Educational Psychology 53: 72-75; 1962b.

The relationships between factors of divergent thinking and teacher ratings of the performances of academically talented high school boys and girls in various subject fields are reported and discussed. The nature of the DT factors and the expression thereof in classroom activities varied markedly according to sex and subject field.

Klausmeier, H. J. "Effects of Accelerating Bright Older Elementary Pupils: A Follow-Up." Journal of Educational Psychology 54: 165-71; 1963.

A follow-up study was completed toward the end of the 5th grade to determine the effects of accelerating bright older pupils from 2nd to 4th grade after a 5-week summer session. The subjects were 1 group of 10 boys and 10 girls, above the median CA of 2nd graders prior to being accelerated; 2 groups of 20 non-accelerated 5th graders of superior abilities, 1 above and 1 below the median CA of nonaccelerated 5th graders; and 2 groups of 20 nonaccelerated 5th graders of average abilities, 1 above and 1 below the median CA of nonaccelerated 5th graders. No unfavorable academic, social, emotional, or physical correlates of acceleration were found. A comparison of these results with other research on acceleration without skipping of content suggests that pupils of superior abilities should complete the baccalaureate degree no older than age 21.

Klausmeier, H. J., and Wiersma, W. "Relationship of Sex, Grade Level, and Locale to Performance of High IQ Students on Divergent Thinking Tests." Journal of Educational Psychology 55: 114-19; April 1964.

Subjects, 160 5th graders and 160 7th graders of high IQ, were administered tests of divergent thinking and convergent thinking, yielding 14 scores. Girls generally scored higher on divergent thinking tests and boys scored higher than girls on convergent thinking tests. The 7th graders scored higher than the 5th graders except on 3 of 10 divergent thinking tests and 1 of 4 convergent thinking tests. On 7 tests of divergent thinking, but on no test of convergent thinking, the pupils in the large city scored significantly lower than those in the smaller city. Conditions related to living in the city, rather than differences in curriculum and instruction, were hypothesized to contribute to the lower performance.

Knapp, R. H. "Demographic Cultural and Personality Attributes of Scientists." (pp. 205-16) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

A review of the Knapp and Goodrich and other studies of the collegiate origins of American scientists. Small liberal arts colleges in the North and West were very productive.

Knight J., and Chansky, N. M. "Anxiety, Study Problems, and Achievement." Personnel and Guidance Journal 43: 45-46; September 1964.

To study the effects of study problems and anxiety on achievement relative to ability, scores on the California Mental Maturity Test, California Achievement Test, Counseling key of Brown Holzman Survey of Study Habits and Attitudes, and Children's Manifest Anxiety Scale on 66 7th graders were examined. Discrepancies between achievement in reading, arithmetic and language with such achievements expected on the basis of the Intellectual States Index of the CTMM were correlated with study problems and anxiety scores. Correlations of achievement relative to ability with anxiety were low. Study problems explained such achievement moderately. Correlations were higher in a sample of girls. The use of the Brown Holzman Counseling key in studying achievement of 7th graders were found to be promising.

Koeppel, R. P., and Rothney, J. W. M. "Evaluation of First Steps in the Counseling of Superior Students." Personnel and Guidance Journal 42: 35-40; September 1963.

Found no effects in one day counseling of students.

Koestler, A. The Act of Creation. New York: Macmillan Co., 1964. (Cf. review Scientific American 211: 5: 145-48; November 1964.)

Matrices (strategies) represent organized rules for habitual response which tend to become "blocked." "Unblocking" (bisociation) requires that we recognize similar elements in two different matrices creating a breakthrough or analogy which leads to humor or inspiration. The hierarchical nature of life processes creates conditions in which bisociation is an essential process.

Kogan, Zuse. "Methods of Furthering New Ideas." (pp. 277-81) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.

Paper by head of Creative Thinking Institute (5665 West Madison Street, Chicago 44, Illinois) discusses "approach" method of problem solving.

Konde, A. J. Selected Practices Used in Administering the Advanced Placement Program in the Secondary Public Schools of the State of New York. Unpublished doctoral thesis, Bronx, New York: Fordham University, 1963.

Kornrich, M. (50 South Middle Neck Road, Great Neck, New York 11021) Achievement: A Book of Readings. Springfield, Illinois: C.C. Thomas Co., 1965.

Projected volume on underachievement.

Kowitz, G. T., and Armstrong, C. M. "Underachievement: Concept or Artifact?" School and Society 89: 347-49; October 1961. (Cf. [pp. 362-65] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

Suggests that underachievement is a testing artifact.

Krause, I. B. "Some Attributes, Aptitudes and Interests of the Gifted." Gifted Child Quarterly 6: 139-49; Winter 1962.

Report of the 8-year study of college programs for the gifted in the Southeast.

Krieger, M. H. "The Mutual Effect of an Exchange of Children's Drawings Between Foreign Countries." Dissertation Abstracts 22: 2289-2290; 1962.

A significant directional change was found in 11 of 16 criteria.

Krippner, S. "The Vocational Preferences of High-Achieving and Low-Achieving Junior High School Students." Gifted Child Quarterly 5: 88-90; Autumn 1961.

When high scoring students were compared with opposites, high girls preferred teaching, high boys preferred science; high has more definite occupational goals.

Krippner, S. "Sex, Ability and Interest: A Test of Tyler's Hypothesis." Gifted Child Quarterly 6: 105-10; Autumn 1962.

Bright and dull boys and girls were compared on a vocational questionnaire. The high boys responses differed from the low boys, but not so for the girls, thus confirming Tyler's hypothesis that mental ability scores are associated with boys play interests and vocational choices but not with girls.

Krippner, S., and Herald, Clare. "Reading Disabilities Among the Academically Gifted." Gifted Child Quarterly 8: 12-20; Spring 1964a.

Sophisticated study reports differences between WISC performance and full scale IQ's for academically talented and average group. Same causes found, but talented group etiology was due to disturbed neurological organization or neurosis. Good review of literature.

Krippner, S. "Creativity and Psychic Phenomena." Gifted Child Quarterly 8: 51-55; Summer 1964b.

Notes similarities between two fields. 50-item bibliography.

Kropp, R. P. "The Diagnosis of Underachievement Difficulty." Bulletin of the National Association of Secondary-School Principals 45: 84-86; May 1961.

As against belief that underachievement stems from emotional trouble, writer avers that it is primarily a function of deficiencies in the mental processes as defined by Bloom's taxonomy (knowledge, comprehension, application, analysis, synthesis, and evaluation).

Kruse, I. B. "Some Attitudes, Aptitudes, and Interests of the Gifted." Gifted Child Quarterly 6: 139-40; Winter 1962.

A comparison of efforts of colleges in the South for gifted students between 1953 and 1960.

Kubie, L. S., M.D. Neurotic Distortion of the Creative Process. Porter Lecture Series 22. Lawrence: University of Kansas Press, 1958.

A theory of thinking that causes objects to be seen in new or different ways. Excellent content for those interested in creative teaching.

Kuhn, T. S. "The Essential Tension: Tradition and Innovation in Scientific Research." (pp. 341-54) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

Mind of scientist examined for lack of prejudice and willingness to be creative.

Lagemann, J. K. "How We Discourage Creative Children." Redbook 120: 44; March 1963. (Cf. Reader's Digest; May 1963.)

Quotes Torrance that: "I. Q. tests do not measure creativity; by depending on them, we miss 70% of our most creative youngsters." Torrance's findings, after studying over 15,000 boys and girls from nursery school to 6th grade, show that most children start life with a variable, creative spark and that most of them have it knocked out of them by the time they reach the 4th grade. He observes that "it is not that parents and teachers deliberately squelch creativity; rather they fail to recognize it."

Pointed up in the article are: (1) how creativity differs from the kind of mental ability measured by I. Q. tests; (2) signs to look for in detecting creativity; and (3) what parents and teachers can do to eliminate or mitigate the pressures that make children give up their creative work.

Lahn, M. "Some Effects of Conflict on Creative Thinking." Unpublished Ph.D. thesis, Ann Arbor: University of Michigan, 1963. Dissertation Abstracts 24: 835; 1964.

Conflict enhanced performance on easy items, but interfered with it on hard items.

LaMar, R. V. Combination Class Grouping and Achievement. Unpublished doctoral thesis, Berkeley: University of California, in process, 1963.

Lamb, K. The Development and Partial Validation of an Instrument for the Identification of Gifted Children. Unpublished doctoral thesis, Colorado: University of Denver, in process, 1963.

Langan, Sylvia. "A Comparative Study of a Number of Variables Assumed Capable of Accounting for Differences Between Intellectually Gifted Achievers and Underachievers in the New York City High Schools." Unpublished Ph.D. thesis, New York: New York University, 1962. Dissertation Abstracts 23: 926; 1963. Also University Microfilms, Inc., 62-3284.

Study compared 30 matched males and females, achievers and underachievers with results that achievers had fathers with more education; they had healthier family relationships and found greater satisfaction in school. They had more academic hobbies, spent more time in study and experienced less problems. Underachievers were more self-indulgent and in need of early satisfaction.

Lawton, Mildred. "Hunter College High School." Gifted Child Quarterly 5: 65; Summer 1961.

Brief description of the Hunter College High School for Gifted Girls.

Laycock, F. "The Gifted as Pupils for Student Teaching: An Exploration at Oberlin College." Journal of Teacher Education 15: 420-27; December 1964.

Discusses a summer workshop for the gifted at Lorraine, Ohio, in which student teachers were used.

Laycock, S. R. "Gifted Children." Special Education in Canada (The 1963 Quance Lectures). Toronto: W. J. Gage, Ltd., 1963.

Overview of subject with emphasis on Canadian aspects.

Leary, T. "The Effects of Test Score Feedback on Creative Performance, and of Drugs on Creative Experience." Cambridge, Massachusetts: Harvard University, (n.d.). (Mimeo.) (Cf. Creativity Review 5: 1: 4-6; January 1963.)

Calls attention to the neglected issue of consciousness. Sees creativity as transactional rather than personal trait, susceptible of increase by training and environment, and of decrease under authoritarianism.

Leary, T. "The Effects of Test Score Feedback on Creative Performance, and of Drugs on Creative Experience." (pp. 87-111) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

An important, disturbing and thought-provoking article which avers that western science concentrates too much on the reality of behavior instead of the reality of consciousness. Sees creativity as one of the many "games" played by our behavior-oriented rules and hence capable of great modification. The real search for creativity should lie within man in his expansion of consciousness which is the only true and adequate source of creativity and which is best stimulated by drugs like psilocybin, accounts of which experiments are given. (Continued research of this type has since made author highly controversial.)

Lebois, G. "An Analysis and Synthesis of the Concept of Creativity." Unpublished Ph.D. thesis, Pennsylvania: University of Pittsburg, 1963. Dissertation Abstracts 24: 1883; 1964.

A library-research thesis on the nature and theory of creativity.

Lesser, G. S., and Davis, F. B. Identification of Gifted Elementary School Children with Exceptional Science Talent. New York: Hunter College Educational Clinic, 1960. (Mimeo.)

This report of Cooperative Research Project No. 392 details the construction of two forms of the Hunter Science Aptitude Test for the identification of science talent in six- and seven-year-old children.

Lessinger, L. M., and Martinson, Ruth. "The Use of the California Psychological Inventory with Gifted Pupils." Personnel and Guidance Journal 39: 572-75; March 1961.

Highly significant differences were found between gifted and average 8th graders on the CPI in the direction of greater psychological maturity for the able. Study excerpted from 1961 final report of the California Pilot Project.

Lessinger, L. M., and Seagoe, May V. "The Nature of Enrichment for Gifted Students." Journal of Educational Research 57: 142-46; November 1963a.

Report of doctoral study on mathematic enrichment for high school gifted found gains on evaluation.

Lessinger, L. M. "Test Building and Test Banks Through the Use of the Taxonomy of Educational Objectives." California Journal of Educational Research 14: 195-201, November 1963b.

Uses Bloom's Taxonomy to help teachers construct tests which measure more complex aspects of learning. Useful table accompanying article.

Leton, D. A., and Walter, S. "A Factor Analysis of the California Psychological Inventory and Minnesota Counseling Inventory." California Journal of Educational Research 8: 126-33, May 1962.

To what extent do these two inventories assess similar characteristics of personal and social adjustment?

1. Intercorrelations of MCI support evidence previously published, that there are five rather than seven scales.
2. Intercorrelations of CPI scales range from -.15 to +.79. The coefficients reported in this study are similar to those reported by Gough in standardization studies.
3. For the 144 intercorrelations between the MCI and CPI scales the coefficients ranged from -.19 to +.70 with a median of +.38.
4. In the factoring of the two instruments five factors were identified which appear relevant to counseling inventories. These factors may be tentatively identified as: MENTAL HEALTH AND PERSONAL EFFICIENCY - SOCIAL CONFIDENCE AND DRIVE FEMINITY - MASCULINITY DEPENDENCE - INDEPENDENCE NEED FOR GOOD IMPRESSION.

Levenson, W. B., and others. "Educating the Gifted in Mathematics, Cleveland." (pp. 371-75) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.

Details of the Cleveland Program in Mathematics.

Lewis, Gertrude. Educating the More Able Children in Grades Four, Five, and Six. U. S. Department of Health, Education, and Welfare, Office of Education. Washington, D. C.: Superintendent of Documents, Government Printing Office, 1961a.

This 84-page booklet has 6 chapters: introduction, organization, curriculum, characteristics, learning environment, and summary. Appendix contains a 57-item annotated bibliography.

Lewis, Gertrude. "Educating Talented Children in Elementary School." Washington, D. C.: U. S. Office of Education, Division of Elementary and Secondary Education, No. 36, OE-35023, May 1961b.

Annotated bibliography of 19 pages on the education of talented children.

Lewis, Lanora. Talent and Tomorrow's Teachers. Washington, D. C.: U. S. Office of Education, No. 11 (New Dimensions in Higher Education), OE-50036, 1963.

Transcript of Proceedings of 1962 Conference on the Superior Student addresses itself to honors programs in college for teachers. They attract superior students, and give future teachers deeper learning experiences.

Lincoln, J. W. "Developing a Creativeness in People." (pp. 269-75) in Parnes, S. J., and Harding H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.

The "Gordon technique" of synectics and its applications to operational creativity is discussed.

van der Linden, Rev. A. J. "A Summer Mathematics Program for High-Ability Secondary School Students." Mathematics Teachers 55: 369-76; May 1962.

The high-ability student in mathematics is described as having the following traits: an extraordinary memory, ability to think abstractly at high level and to apply his knowledge, intellectual curiosity, persistent goal-directed behavior, intuition, high vocabulary and facility of expression; a virtuosity which is creative and sound knowledge of advanced areas.

Lindholm, B. W. "Changes in Conventional and Deviation IQ's." Journal of Educational Psychology 55: 110-13; 1964.

Subjects, 50 children from the Fels Research Institute, were given the 1937 revision of the Stanford-Binet Intelligence Scale from 2-1/2 through 12 years of age. The greatest changes were made by the very superior students. Results disclosed that changes in IQ were related to levels of IQ. Smaller changes were made by the high average subjects. The IQ's of the superior and average subjects did not change. In addition, Pinneau's (1961) suggestion that conventional IQ's on the Stanford-Binet should be replaced by deviation IQ's was questioned, since there were no differences in the relative variability of the 2 types of scores.

Link, Frances. "When they are Gifted." Education 81: 158-62; November 1960.

A discussion of the program of enrichment at Elkins Park, Pennsylvania.

Locke, E. A. "Some Correlates of Classroom and Out of Class Achievement in Gifted Students." Journal of Educational Psychology 54: 238-48; October 1963.

A matrix of 47 intellectual, personality, and demographic variables was factored into 11 factors for 112 gifted science students. Vocabulary and self-control were most related to classroom achievement, while school and city size and originality were most related to out of school achievement. Sex differences appeared.

Lockwood, S. H. An Experimental Investigation of the Retention of Gains in Academic Achievement Made by a Group of Gifted Children During a Program of Planned Acceleration in the Intermediate Grades. Ed.D. thesis, New Brunswick: Rutgers University, 1959. Dissertation Abstracts 21: 499-500, 1960.

Concluded that gains were held.

London, N. T. "Motivating the Academically Gifted." Education 81: 356-58; February 1961.

Brief overview of motivation on the college level with 9 references.

Loomer, B. M. Ability Grouping and Its Effect Upon Individual Achievement. University Microfilms, Inc., 62-4982.

Lorge, I. "The Teacher's Task in the Development of Thinking." Reading Teacher 13: 170-75; 1963.

A discussion of some of the operational problems in getting children to think.

Lowenfeld, V. "Creativity: Education's Stepchild." (pp. 9-17) in Parnes, S. J., and Harding, H. F. A Source Book of Creative Thinking. New York: Charles Scribner's Sons, 1962.

Posthumous paper in which the art work of Russian and American children is compared. A thoughtful article which concludes with suggestions to parents.

Lucht, W. E. "Creativity: A Study of Relationships." Unpublished Ph. D. thesis, Iowa City: State University of Iowa, 1963. Dissertation Abstracts 24: 4085; 1964.

Using MMPI Psychopathic Deviate Scale as a measure of non-conformity, found low if any relationship between creativity and non-conformity or between creativity and achievement.

Lum, Mable. "A Comparison of Under and Over Achieving Female College Students." Journal of Educational Psychology 51: 109-14; June 1960.

Overachievers have stronger motivations for study, are more self-confident and have a greater work capacity under pressure. Underachievers are more passive, procrastinative and critical.

Lunaas, Mildred Josefine. Nature and Nurture of Creativity: Implications for Education. Unpublished doctoral thesis, Tallahassee: University of Florida, 1963.

Lynch, Jane Eva. Critical Analysis of the Concept of Creativity in Current Education Theory. Unpublished doctoral thesis, Washington, D. C.: Catholic University of America, 1963. Dissertation Abstracts 24: 1940; 1964.

Creativity is a development of the soul which is brought to light by the aid of Divine Grace.

MacIntyre, Patricia. "A Psychiatrist in the Gifted Program." Gifted Child Quarterly 5: 7-10; Spring 1961.

An account of the Pupil Study Center at San Diego which works with emotionally disturbed gifted children, with some case histories.

MacKinnon, D. W. "On Becoming an Architect." Architectural Record 64: 4-6; August 1959, Western Section.

The article's title best sums up for the author and the reader the year of study of 40 architects, nominated by a panel of experts for their unusual creativeness, on what aptly characterizes the life of an architect. In this review the author analyses findings of their scholastic attributes, attitudes, values, temperament, tensions, common friends, tolerances and capacities.

MacKinnon, D. W. "The Highly Effective Individual." Teachers College Record 61: 367-78; April 1960. (Cf. Current Issues in Higher Education. Washington, D. C.: National Education Association, 1961.)

The creative person is open to experience, often struggling to reconcile opposites in his nature, striving to tolerate increasingly large amounts of tension as he seeks solutions to problems he has set for himself.

MacKinnon, D. W. "Fostering Creativity in Students of Engineering." Journal of Engineering Education 52: 129-42; 1961a.

Article considers creativity in student engineers, finding their highest value to be (1) theoretical and (2) economic and political in character. Mean scores is interpreted as less an indication of low intelligence than of its narrowness. Schools and colleges should foster creativity by selecting students with creative potential for admission. True creativity, defined in adaptiveness to a response and its unusualness, is apparently that of intelligence. However, if the organization of information, interests and skills is narrow and within a specific type of knowledge, the number of items available for new combinations may be inadequate to the demands of a situation requiring a creative solution. The more creative person has a relative absence of repression and suppression as mechanisms for control of impulses and images.

MacKinnon, D. W., chairman. A Conference on the Creative Personality. Berkeley: University of California, (IPAR), 1961b. (Mimeo.)

Proceedings of an IPAR conference held at Lake Tahoe, in 1961 describes IPAR experiments on various types of creative persons.

MacKinnon, D. W. "What Makes a Person Creative?" Saturday Review 45: 15-17ff; February 10, 1962a.

"...it is high level of reflective intelligence, his openness to experience, his freedom from crippling restraints and impoverishing inhibitions, his esthetic sensitivity, his cognitive flexibility, his independence in thought and action, his high level of creative energy, his unquestioning commitment to creative endeavor, and his unceasing striving for solutions to ever more difficult problems...."

MacKinnon, D. W. "The Nature and Nurture of Creative Talent." American Psychologist 17: 484-95; 1962b. (Also [pp. 305-14] in Ripple, R. E. Readings in Learning and Human Abilities. New York: Harper & Row, 1964.)

If a person has the minimum of intelligence required for mastery of a field of knowledge, whether he performs creatively or banally in that field will be crucially determined by non-intellective factors. We would do well in the future to pay more attention to the nurturing of non-intellective traits which the author found to be intimately associated with creative talent. Stressed is the openness of the creative person to experience from within and without. This should caution parents and teachers (1) in setting limits; (2) that learning discipline is necessary, but should not be overlearned; (3) there is a time and place for learning; (4) that having learned, they should be used flexibly, not rigidly or impulsively; (5) that there is a danger of prejudging or perceiving if whole areas of experience are excluded from perception; and (6) that new ideas are criticized too soon and too often.

MacKinnon, D. W. "Identifying and Developing Creativity." Journal of Secondary Education 38: 166-74; 1963.

Discusses creativity and its stages. Type 1 creativity is the product of an expression of the inner states. The creator externalizes something of himself into public field. Type 2 creativity is a product unrelated to the creator as a person, such as a patent. Type 3 creativity combines the first two, examples being, architects, performers, musical arrangers, etc. Article concludes by viewing identification of creativity in school and its implications for the teacher and administration.

MacKinnon, D. W. "The Creativity of Architects." (pp. 359-78) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc. 1964.

Description of IPAR research which gives data on a large number of test variables.

MacKinnon, F. A. Parental Variables Related to Creative Abilities in Gifted Children. Unpublished doctoral thesis, Urbana: University of Illinois, in process, 1963.

Mackler, B. "Creativity and Life Style." Ed.D. thesis, Lawrence: University of Kansas, 1962. Dissertation Abstracts 24: 5571; 1964.

Five life style groups of 12 coeds (art majors, dance majors, visually disabled, physically disabled, and control) could be discriminated by Torrance Creativity Tests. Environmental manipulation also appeared to affect creativity.

Macleod, R. B. "Retrospect and Prospect." (pp. 175-214) in Gruber, H. E., and others, editors. Contemporary Approaches to Creative Thinking. New York: Atherton Press, 1963.

Is it possible to have a science of creativity? What are the criteria? Under what conditions do people become creative?

Maddi, S. R. "Motivational Aspects of Creativity." Chicago: University of Chicago, Department of Psychology, 1964. (Mimeo.) (Paper presented at American Psychological Association Los Angeles Convention, 1964.)

Sees the motivational explanation for creative behavior as the need for excellence or novelty. Discounts idea that creative behavior does not occur when the external evaluation is strong or when the individual is frustrated or involved emotionally.

Maes, W. Identification of the Gifted in the Classroom. Unpublished doctoral thesis, East Lansing: Michigan State University, in process, 1963.

Mahoney, H. J. "Programs for the Gifted." (pp. 118-19) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.

Brief statement about acceleration.

Maier, N. R. F., and Hoffman, L. R. "Using Trained 'Developmental' Discussion Leaders to Improve Further the Quality of Group Decisions." Journal of Applied Psychology 44: 247-51; 1960. (Cf. idem 44: 278-82; 1960.)

Further discussions of quality improvement in brainstorming.

Maier, N. R. F., and Hoffman, L. R. "Organization and Creative Problem Solving." Journal of Applied Psychology 45: 277-80; 1961.

Provides evidence that the formal authority relations in business organization inhibit creative problem-solving as well as attracting non-creative types.

Maier, N. R. F. Creative Management. New York: John Wiley & Sons, Inc., 1962a.

A 226-page book includes industrial and employee relationships, and other aspects of management with bibliography.

Maier, N. R. F., and Salem, A. R. "Improving Solutions by Turning Choice Situations into Problems." Personnel Psychology 15: 151-57; 1962b.

Procedures which prevent immediate acceptance of an obvious solution tend to increase the consideration of alternatives and the quality of group problem-solving.

Maier, N. R. F., and others. "Differences and Disagreement as Factors in Creative Group Problem-Solving." Journal of Abnormal Social Psychology 64: 206-14; 1962c.

Conflict generated by increasing the resistance of subordinate members of a group to a solution offered by a member in an authority position increases the frequency of high quality solutions.

Maier, N. R. F. "Maximizing Personal Creativity through Better Problem Solving." Personnel Administration 27: 14-18; 1964.

Can an individual increase his creative potential? The author's principles suggest an affirmative response.

Mallinson, G. L. "Creativity in Science and Mathematics." Educational Leadership 18: 24-28; October 1960.

Discusses aims of sciences, fostering creativity through science and appropriate activities in the classroom. (Part of a symposium.)

Maltzman, I., and others. "A Procedure for Increasing Word Association Originality and Its Transfer Effects." Journal of Experimental Psychology 56: 392-98; 1958.

Training instructions were found to increase originality. (Cf. also, ibid., 56: 392-98 which found training effects another originality situation.)

Maltzman, I. "On the Training of Originality." Psychological Review 67: 229-42; 1960a.

Reviews his work on training originality which he believes can be accomplished.

Maltzman, I., and others. "Experimental Studies in the Training of Originality." Psychological Monographs 74: (6, Whole No. 493): 1960b. Further detailed study of effectiveness in training for originality.

Maltzman, I. "Fluency and Originality in Written Themes." Perceptual Motor Skills 16: 281-82; 1963.

Correlations from .27 to .54 were obtained between fluency and originality.

Maltzman, I., and others. "Experimental Studies of Associative Variables in Originality." Psychological Monographs 78: 3; 1964.

A series of experiments was conducted to study associative variables that may facilitate problem-solving performance on problems having a specific correct solution. Several experiments were conducted with a group form of the two-string problem. It was found that prior verbal learning of relevant response sequences failed to affect problem-solving performance in the predicted manner. A more extensive series of experiments was conducted employing the Remote Associates Test (RAT) of originality. Facilitation of solutions to the items was found to vary with the extent to which prompting stimuli were associated with the problem solutions. Manipulation of associative-variables reliably influenced performance on RAT. Problem-solving performance on RAT, in contrast, was relatively resistant to changes in "extrinsic" variables.

Marksberry, Mary Lee. Foundations of Creativity. New York: Harper & Row, 1963.

Marshall, M. S. "The Case of the 'Gifted' Child." Educational Administration and Supervision 40: 155-62; March 1954.

A philosophical discussion of the concept of "the gifted" in which the author advocates emphasizing the abilities of all individuals rather than trying to classify the individuals into mutually exclusive groups of those who are "gifted" and those who are not.

Martin, J. G., and Davidson, Judy. "Recall of Completed and Interrupted Tasks by Achievers and Underachievers." Journal of Educational Psychology 55: 314-16; December 1964.

Study reports on Zeigarnik effect (greater recall on incompleting than completed task). Achievers recalled a greater percentage than underachievers both absolutely and in regard to completed tasks.

Martinson, Ruth. "Summary of the Final Report of the California Study." Educational Programs for Gifted Pupils. Sacramento: California State Department of Education, 1961. (Cf. [pp. 211-16] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

The results of the three-year California Pilot Project matching gifted children in various instructional plans showed general gains for the experimental groups on tests of achievement and in self and parental evaluation.

Martinson, Ruth. "Guidance of the Gifted." (pp. 176-81) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.

Discusses identification, counseling, and grading.

Martinson, Ruth, consultant. Understanding the Gifted. (Color film, 28 min.) CASPP and Los Angeles County Schools, No. 71005, 1964. (Churchill Films, 662 North Robertson Boulevard, Los Angeles 90069.)

Abilities of gifted students to generalize and to be creative as well as the multiplicity of their interests and expression of their ideals are portrayed through group discussions and interviews.

Maslow, A. H. "Creativity in Self-Actualizing People." (pp. 83-95) in Anderson, H. H., editor. Creativity and Its Cultivation. New York: Harper & Brothers, 1959.

Discusses characteristics of self-actualizing persons, peak experiences, primary and secondary form of creativity.

Maslow, A. H. "Emotional Blocks to Creativity." (pp. 93-103) in Parnes, S. J., and Harding H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.

Discusses some of the psychological bases which underlie creativity and emotional blockages which occur as it wells up from the subconscious.

Mass, J. B. The Relationship between Job Satisfaction and Creativity. Unpublished doctoral thesis, Ithaca, New York: Cornell University, 1964.

Matthews, C. G. "Differential Performances of Non-Achieving Children on the Wechsler Intelligence Scale." Ph.D. thesis, Lafayette, Indiana: Purdue University, 1958.

Non-achieving children grouped under etiological headings, including emotional disturbances. IQ 94/99/96 was the highest of all groups for the emotionally disturbed. Most subtest scatter, least perseveration.

Matthews, J. "The Psychology of Creative Thinking Groups." (pp. 139-48) in Parnes, S. J., and Harding, H. F. A Source Book of Creative Thinking. New York: Charles Scribner's Sons, 1962.

A discussion of brainstorming with various industrial groups.

Maw, W. H., and Maw, Ethel W. "Nonhomeostatic Experiences as Stimuli of Children with High Curiosity." California Journal of Educational Research 12: 57-61; March 1961a.

Children of the high curiosity group selected unbalanced and unfamiliar environmental experiences significantly more often than children of the low curiosity group.

Maw, W. H., and Maw, Ethel W. "Establishing Criterion Groups for Evaluating Measures of Curiosity." Journal of Experimental Education 29: 299-306; 1961b.

An early exploration into characteristics of children showing high curiosity.

Maw, W. H., and Maw, Ethel W. "Selection of Unbalanced and Unusual Designs by Children High in Curiosity." Child Development 33: 917-22; 1962.

High curiosity children chose unbalanced and unusual designs more frequently than low curiosity children.

Maw, W. H., and Maw, Ethel W. "The Difference Between the Scores of Children with High Curiosity and Children with Low Curiosity on a Test of General Information." Journal of Educational Research 57: 76-79; October 1963.

Using 31 5th-grade students in two criterion groups study found significant differences on a test of general knowledge though groups had been equated for IQ. Curious students appear to gather more information than non-curious of the same ability. Lack of curiosity prevents children who have the ability from developing stores of information.

May, F. B. "Creative Thinking: A Factorial Study of Seventh Grade Children." Unpublished Ph.D. thesis, Madison: University of Wisconsin, 1961. Dissertation Abstracts 22: 1876-1961.

Findings suggest some creative writing aptitudes cannot be measured by general tests of creative thinking. No sex differences and low creativity-IQ correlations found.

Mayor, J. R., and Brown, J. A. "New Math in the Elementary School." School Review 70: 102-11; 1962.

This article gives a brief description of the various projects in the field of mathematics undertaken by such groups as the University of Chicago, the University of Illinois, the University of Maryland, and particularly the School Mathematics Study Group in which the author played an active role.

McArthur, H. J. "A Survey of Academic Offerings and Courses Pursued by Academically Talented Pupils in Selected Kansas Schools." Unpublished Ed.D. thesis, Lawrence: University of Kansas, 1962. Dissertation Abstracts 23: 2772; 1963.

A survey of selected Kansas high schools, a la Conant, found none required or challenged gifted students to pursue such a course.

McClelland, D. C. "Encouraging Excellence." Harvard Alumni Bulletin 64: 161-65; November 11, 1961a. See also Daedalus Fall 1961.

A thoughtful and critical reappraisal of the formula for encouraging excellence "the best boys go to the best schools and then on to the best jobs." Argues that the excellence of the non-conformist gets lost in an admission policy which heavily emphasizes top grades and scores.

McClelland, D. C. The Achieving Society. Princeton, New Jersey: D. Van Nostrand Co., 1961b.

Cross cultural study of achievement in 512 pages includes considerable statistical detail. Noting that the presence of serfs in a society contributes to its downfall by restricting the need achievement of its youth, he prescribes a formula for social planning which includes: (1) increasing the other-directedness and hence social solidarity through group school activities, (2) freeing women for employment outside the home where they are subjected to new ideas and escape traditional approaches, (3) the introduction and exploitation of electric motors which breaks traditional social patterns, and (4) decreasing father-dominance in families as a means of increasing sons need-achievement.

McClelland, D. C. "On the Psychodynamics of Creative Physical Scientists." (pp. 141-74) in Gruber, H. E., and others, editors. Contemporary Approaches to Creative Thinking. New York: Atherton Press, 1963a.

Traces family and personality origins of commitment and detachment with which scientist occupies himself especially when theories go wrong. His paper is a case study of the unfolding of personality dynamics in the group of physical scientists.

McClelland, D. C. "The Calculated Risk: An Aspect of Scientific Performance." (pp. 184-92) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley Sons, Inc., 1963b.

Discusses reasonable risk-taking and need-achievement.

McCord, Mary. "Providing for Individual Differences: The Gifted Child." Elementary School Journal 54: 376-77; March 1954.

Reviews and includes significant passages from an article and two monographs on the topic of the gifted. The reviews are included as part of the author's "Educational News and Editorial Comment" in this journal.

McDaniel, Marjorie. "More for the Gifted." Indiana Teacher 105: 6: February 1961.

A somewhat popular overview.

McDaniel, Marjorie. "Grouping for More Effective Teaching: Emphasis on the Needs of the Gifted Child." Teachers College Journal 34: 2: November 1962.

A defense of grouping as a way of meeting the needs of gifted children.

McDaniel, Marjorie, consultant. The Gifted Child. (Sound filmstrips.) Terre Haute, Indiana: Indiana State College, Audio-Visual Center, 1963.

One hundred twenty-two frame color strips shows gifted children in summer workshop carrying out research and study projects and on field trips.

McElvain, J., and others. "Relationships between Creativity and Teacher Variability." Psychological Reports 13: 186; 1963.

Creativity test scores on 209 teachers were found unrelated to sex, education or experience, but negatively correlated with age. Principals tended to give lower effectiveness ratings to highly creative teachers.

McFall, R. W. "Development and Validation of an Achievement Test for Measuring Higher Level Cognitive Processes in General Science." Journal of Experimental Education (in press).

McFarlane, Ruby. (150 Jaxine Drive, Altadena, California) "Gifted Senior High School Boys Self-Appraisal of Their Individual Patterns of Under-Achievement as Shown by Teacher's Marks." Unpublished Ed.D. thesis, University of Southern California, in process, 1965.

McGillivray, R. H. Differences in Home Background Between High-Achieving and Low-Achieving Gifted Children. Unpublished doctoral thesis, Ontario: University of Toronto, 1963.

McGuire, C., and Jennings, E. Factor Variables in the Multivariate Analysis of Talented Behavior. Report No. 12. Austin: University of Texas, Laboratory of Human Behavior, Department of Educational Psychology, 1961.

Explanation and 6 charts representing factor variables of talented behavior in 7th and 9th grade students. Factor analysis supports the following equation: Talented Behavior = Factor (Internal Personality, Internal and External Pressures) Sex Role, Generation and Peers, Context and Setting.

McGuire, C. Creativity and Emotionality. Report No. 12. Austin: University of Texas, Laboratory of Human Behavior, Department of Educational Psychology, 1962.

Eleven-page research on the relationship between creativity and emotionality. Ten "factors-in-persons" and three dimensions of personality are discussed.

McGuire, C. Personality Correlates of Creativity. Report No. 13. Austin: University of Texas, Laboratory of Human Behavior, Department of Educational Psychology, 1963.

Postulates that divergent thinking acts as catalyst to drive person to employ abilities, acquire new expectations, cope with pressures, produce creative or talented performances. Curiosity and need achievement also catalysts. Three personality dimensions significant to mental health (1) relaxed outgoing optimism, (2) creatively intelligent autonomy, (3) self-disciplined stability.

McGuire, C., and others. The Years of Transformation, and The Assessment of Talented Behavior. Austin: University of Texas, Laboratory of Human Behavior, Department of Educational Psychology, 1964a.

Available by the end of 1964 at the Cooperative Research Branch, Office of Education.

McGuire, C., and others. "Dimensions and Criteria of Talented Behavior." Austin: University of Texas, Talent Study, September 1964b. (Mimeo.)

The following criteria loaded significantly on teacher-evaluated productive thinking: meaningfully structures ideas, perceptive re problems, copes with environment (all teacher nominations). The following criteria loaded significantly on peer evaluated creative effectiveness: effective leader, works effectively, unusual ideas (all peer nominations).

McGuire, R. A. A Proposed Plan to Evaluate Programs for the Gifted. Unpublished doctoral thesis, Berkeley: University of California, in process, 1963.

McIntosh, Margery P. "The Gifted in La Mesa Spring Valley School." Education 80: 154-57; November 1959.

A review of the program for the gifted in La Mesa, California. Discussed are the strengths and weaknesses of their program which places emphasis on "clustering" on the basis of IQ and reading-achievement ability.

McKee, Irene. "Creativity in the Classroom." (pp. 263-65) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.

Some suggestions about creative things to do in class.

McKellar, P. Imagination and Thinking. New York: Basic Books, 1957.

McKenney, J. W., editor. "Creativity in the Schools." California Teachers Association Journal 60: 1: 3-49; January 1964.

Symposium issue carries articles by Guilford, Hilgard, Williams, Astin, and others under the title of "Creativity in the Schools."

McKnown, H. C. "School Activities and the Gifted Child." Education 79: 12-16; September 1958. (Cf. School Activities 30: 113-16; December 1958.)

Shows how the school can provide experiences that help to broaden and develop the gifted child. Extra-curricular activities are seen as offering opportunities "for discovery and tryout" that lead to broadened experiences.

McPherson, J. H., and Repucci, L. C. Creativity Review Vols. I - III. Midland, Michigan: The Dow Chemical Company (\$3.), 1962.

Reprint of the first 3 volumes in bound form. Much hard-to-get material, chiefly industrial, available here but without index.

Generous reviews of about 100 articles include: Magoun (1940) "The Selection of Men with Creative Ability"; Hutchinson (1949) "How to Think Creatively"; Rogers (1954) "Toward a Theory of Creativity"; Hart (1950) "The Integrative Function in Creativity"; Alfrey "The Psychology of Invention in Chemistry, Physics and Mathematics"; Rappaport (1951) Organization and Pathology of Thought; Ott (1955) "Stimulating Creativity in Research"; Harris The AC Spark-Plug Test of Creative Ability; Von Fange (1954) "The Creative Process in Engineering"; Pye Program for Upgrading Research Creativity; Von Fange (1954) "Creative Sessions in the Creative Process"; Ripley (1953) "Idea Needlers." (An excellent list - JCG.)

Vol. II: Ayres (1955) "Social Attitude Toward Invention"; Tuska (1955) "Increasing Creative Inventiveness"; Maslow (1957) "Emotional Blocks to Creativity"; Pelz Social Factors in the Motivation of Engineers and Scientists; Schutz (1957) "Birds of a Feather Produce Together"; Ryerson and Planty (1960) "Teaching Leadership to Scientists"; Stein Stein Research Environment Survey.

Vol. III: Heist and others (1961) "Personality and Scholarship"; Harris (1960) "The Development and Validation of a Test of Creativity in Engineering"; Bois (1957) Explorations in Awareness; Tangerman (1960) "Creativity: A New Appraisal"; Taylor (1960) "Thinking and Creativity"; Barber (1961) "Resistance by Scientists to Scientific Discovery"; Hurt (1961) "Personality Traits of Creative R/D Personnel"; Taylor (1961) "Research Findings on the Characteristics of Scientists."

McPherson, J. H. "Characteristics and Motivations of Scientific and Professional People." Midland, Michigan: The Dow Chemical Company, Psychology Department, 1963a.

Discusses the characteristics of creative people, and the three broad categories that are blocks to creativity: (a) perceptual blocks, (b) cultural blocks, and (c) emotional blocks.

Discusses the block of communication, and the affinity for routine of some non-creative scientists. Recommendations given are:

1. Get acquainted with yourselves.
2. Learn about the creative process.
3. Promote a "true" reward system.
4. Learn to live with discomfort.
5. Learn to create discomfort to get people going.
6. Teach others.
7. Learn how to give the partnerships that are needed.

McPherson, J. H. "A Proposal for Establishing Ultimate Criteria for Measuring Creative Output." (pp. 24-29) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963b.

Ways of measuring creative output by criteria such as "inventivlevel" and others are discussed.

McPherson, J. H. "The Creative Manager." Midland, Michigan: The Dow Chemical Company, Psychology Department, August 1964a.

Discusses the factors that make up the creative manager and the important steps that one must take in order to become a creative manager, i. e.,

1. Knowledge of self.
2. Knowledge of individual differences.
3. Knowledge of group psychology.
4. Knowledge of the creative process.
5. Knowledge of the relationship between organizational philosophy and behavior.

McPherson, J. H. Ape to Agape. (Film.) Michigan: Delta College, University Center, 1964b.

A film which integrates the major area of the creativity domain: Individual, intellectual and emotional factors, the creativity process, and support groups and environments.

McPherson, J. H. "Prospects for Future Creativity Research in Industry." (pp. 414-23) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964c.

Reports on the industrial prospectus.

McWilliams, E., and Brown, K. E. Superior Pupil in Junior High School Mathematics. U. S. Department of Health, Education, and Welfare, Office of Education, Bulletin 1955, No. 4. Washington, D. C.: Superintendent of Documents, Government Printing Office, 1955. Also Education Digest 21: 23-26; Fall 1955.

Chapters on classroom provisions, out-of-class activities, organization of special classes and acceleration, identification, staff and community resources. Brief descriptions of activities in many school districts.

Meadow, A., and others. "Influence of Brainstorming Instructions and Problem Sequence on a Creative Problem Solving Test." Journal of Applied Psychology 43: 413-16; 1959a.

More good solutions were produced under brainstorming instructions than under the non-brainstorming instructions. Significantly more good solutions were produced under the brainstorming instructions when they were first given than when they followed non-brainstorming instructions.

Meadow, A., and Parnes, S. J. "Evaluation of Training in Creative Problem Solving." Journal of Applied Psychology 43: 189-94; 1959b.

Three hypotheses formulated in order to evaluate the results of the course in creative problem-solving. That the method employed in the course would produce a significant increment (1) in quantity of ideas; (2) in quality of ideas; and (3) in the three personality variables, need achievement, dominance, and self-control.

Results showed, experimental group attained significant increments on the two measures of quantity of ideas, on three out of five measures of quality of ideas, and on the California Psychological Inventory Dominance Scale, as compared with the control group.

Mearns, H. Creative Power: The Education of Youth in the Creative Arts. Second edition revised. New York: Dover Publications, Inc., 1958.

Expanded version of an old classic first published in 1929 which describes methods and theories of stimulating creative expression in children. Contains much illustrative material gathered from teachers interested in helping children develop their creative potential.

Mednick, S. A., and Halpern, Sharon. "Ease of Concept Attainment as a Function of Associative Rank." Journal of Experimental Psychology 64: 628-30; 1962a.

Subjects were 30 undergraduate paid volunteers. Subjects were given lists of 12 nouns, and asked to put these into 3 groups and an adjective to describe each group. Concepts having higher rank position in the associative hierarchy were attained quicker and with less mistakes.

Mednick, S. A. "The Associative Basis of the Creative Process." Psychological Review 69: 220-32; 1962b.

Defines the associative theory of creative thinking. Predictions are made regarding the effect on creativity by some variables that can be manipulated experimentally.

Mednick, S. A., and Mednick, Martha T. "An Associative Interpretation of the Creative Process." (pp. 54-68) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

Suggests creativity consists in forming new combinations of remote associated elements. Describes development of the remote associates test (RAT).

Mednick, S. A., and others. "Continual Association as a Function of Level of Creativity and Type of Verbal Stimulus." Journal of Abnormal and Social Psychology (in press).

Predicts that number of association to the elements of a problem is directly related to the probability of reaching a creative solution.

Highly creative individuals will respond with a greater number of associations to a stimulus than less creative individuals.

1. Individuals with high RAT scores will show a greater quantity of continual associations.
2. Nouns will elicit more responses than adjectives.
3. Words which occur more frequently in the language will elicit more responses.
4. "Flat hierarchy" words will elicit more responses than "steep hierarchy" words.

Meer, B., and Stein, M. I. "Measures of Intelligence and Creativity." Journal of Psychology 39: 117-26; 1955.

Measures of intelligence and creativity for 64 scientists in industrial research indicate that beyond the 95th percentile there is little relation between intelligence and creativity.

Mehorter, J. T. Self and Society: An Independent Study Course for Gifted High School Students. Unpublished Ed.D. thesis, Charlottesville: University of Virginia, 1964.

This work is comprised of a series of study units which explore through biographical readings and psychological literature a number of personal and social problems toward which, according to the literature on the gifted, intellectually superior individuals are out of behavioral science, with specific reference to the adjustment problems of gifted persons. In conception and practical organization, the work is intended (like the John H. Sandberg work in Social Science reported elsewhere in this bibliography) as enrichment for gifted students through "independent study" in a year-long course of sixteen two-week units that require minimal teacher supervision.

Melville, W. Educating Gifted Children in the Middle Elementary Grades. Unpublished doctoral thesis, Laramie: University of Wyoming, in process, 1963.

Mendelsohn, G. A., and Griswold, Barbara B. "Differential Use of Incidental Stimuli in Problem Solving as a Function of Creativity." Journal of Abnormal Social Psychology 68: 431-36; 1964.

Results were interpreted as reflecting wider development of attention and less screening out of "irrelevant" past experiences by high creatives during problem solving.

Merrifield, P. R., and others. "A Factor-Analytic Study of Problem Solving Abilities." Los Angeles: University of Southern California, Psychological Laboratory, Report No. 22, March 1960. (Mimeo.)

Factors emerging: (1) CMU (verbal comprehension), (2) CMI (conceptual foresight), (3) DMU (ideational fluency, (4) EMI (sensitivity to problems) were the most important.

Merrifield, P. R., and others. "The Differentiation of Divergent Production Abilities at the Sixth Grade Level." Los Angeles: University of Southern California, Psychological Laboratory, Report No. 27, May 1963.

Seven factors (DMU, DMC, DMR, DMS, DMT, EMI, CMI) could be discriminated in bright 6th graders. It would be better to develop these than to work for a single creativity score.

Merrifield, P. R., and others. "Aptitudes and Personality Measures Related to Creativity in Seventh Grade Children." Los Angeles: University of Southern California, Psychological Laboratory, Report No. 28, January 1964. (Mimeo.)

The problem solving syndrom appear related to DMC (spontaneous Flexibility), DMR (associational fluency) and to a lesser extent DMT (originality). Teachers ratings of this syndrom in students, however, were only slightly correlated with factor testing of such students which were easily discriminated in the 7th grade.

Mertz, M. A. A Study of the Causes of Underachievement Among Students of Superior Intelligence at Four Educational Levels, and the Effect of Counseling on Such Underachievement. Unpublished Ph. D. thesis, Houston, Texas: University of Houston, 1962.

Two hundred underachievers equally divided between counseled and non-counseled were followed up with results indicating counseling had been beneficial. Good relationship with authority and good frustration tolerance predicted those who were most likely to stay in counseling.

Merzbacher, C. F. An Investigation of Feelings and Experiences which College Students Report Interfere with Mathematics Performance. Unpublished Ed.D. thesis, Los Angeles: University of Southern California, 1961.

Outline of an intensive study that was made on San Diego college students to identify feeling and experiences which students feel interfere with performance in math.

Metfessel, N. S. "An Investigation of Critical Attitudinal and Creativity Factors Related to Achievement of Culturally Disadvantaged Youth." Los Angeles: University of Southern California. U. S. Office of Education Cooperative Research Grant No. 2615, due April 1966.

Metz, W. A. "The Relative Effects of Stress and Praise on Creativity." Unpublished Ph.D. thesis, Tallahassee: Florida State University, 1961. Dissertation Abstracts 22: 2885; 1962.

Stress instruction facilitated performance of low scholastic aptitude subjects and inhibited performance of high scholastic subjects. Neutral instruction was associated with poorest performance. In general, lower levels of anxiety as measured on the TMAS were associated with higher performance.

Meyer, Priscilla. "A Study of Production of Creative Ideas." American Psychologist 8: 404; 1953.

Low authoritarian students produced more creative responses.

Michalak, R. F. "A Program for High School Youth of Superior Ability." Bulletin of the National Association of Secondary School Principals 44: 120-24, October 1960.

Discusses Milwaukee program for upper 15% and notes that attitudes and conduct have improved.

Miel, Alice, editor. Creativity in Teaching. Belmont, California: Wadsworth Publishing Co., 1961.

A somewhat dated view of creativity from an ASCD point of view, in 9 chapters and 300 pages. Contents include Foshay "The Creative Process Described"; Marie Hughes "Integrity in the Classroom"; Prue Bostwick "Inventiveness with Time, Space and Materials." Most of the contributors have written widely about curriculum, but little about creativity.

Mikkelson, J. E. An Experimental Study of Selective Grouping and Acceleration in Junior High School Mathematics. University Microfilms, Inc., 63-2323.

deMille, R. "The Creativity Boom." Teachers College Record 65: 199-209; December 1963.

An account of the history and implications of creativity research with 25 citations.

Miller, G. L. An Investigation of Teaching Behavior and Pupil Thinking. Unpublished doctoral thesis, Salt Lake City: University of Utah, 1963.

Miller, L. R., editor. Guidance for the Underachiever of Superior Ability. Washington, D. C.: U. S. Office of Education, 1961.

An 85-page booklet of 6 chapters. Shaw's chapter on the identification of underachievement and Stern's on underachievement at the secondary level are the most noteworthy.

Miller, W. I. "A Policy Guide for the Education of Pupils with Superior Ability, Wilmington, Delaware." (pp. 415-19) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.

Policy and administration guide. For others, see ibid., pp. 387-415.

Milwaukee Division of Curriculum and Instruction. "Identification and General Placement Procedures for Pupils of Superior Learning Abilities." (pp. 57-64) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.

Contains general principles and specific identification procedures by grade levels.

Mindess, D. The Relationship of Certain Administrative Factors to the Number of Academic Courses Pursued by the Academically Talented Students in the 1959 Graduating Classes of the Public Secondary Schools of New Hampshire. Unpublished doctoral thesis, Boston, Massachusetts: Boston University, 1964.

Mink, O. G. The Underachiever--A Problem Story. Ithaca, New York: Cornell University, School of Education, 1963a.

Report to Ford Foundation tells of success in counseling parents of underachievers. Contains other essays, including review of literature.

Mink, O. G., and Smith, W. L. "The Relative Impact of Small Group Counseling, Parents, and Teachers on the Self Concept and Teachers Grades of Seventh Graders." Webster, New York: Webster Central Schools, 1963. (Mimeo.) (Reported at San Francisco APGA Convention, 1963.)

A design for improving the performance of underachievers by interaction of several different methods. About 15% underachievers were found in total group.

Mink, O. G. "Multiple Counseling with Underachieving Junior High School Pupils of Bright, Normal and Higher Ability." Journal of Educational Research 58: 31-34; 1964.

One of the few studies which reports positive results in group counseling of underachievers.

Mirman, N. J. A Study of Social Adjustment as it Relates to Grade Skipping in the Elementary School. Unpublished Ed. D. thesis, Los Angeles: University of Southern California, 1961.

Selecting criterion groups from Los Angeles senior high schools and evaluating social adjustment via (1) personal data; (2) office records of extra-curricular activities; (3) home information; (4) teacher judgments; (5) the California Psychological Inventory. Researcher concludes personal adjustment is not appreciably affected by grade skipping. Accelerated students equaled others in all phases, and both they and their parents felt it had been beneficial.

Mirman, N. J. "Teacher Qualifications for Educating Gifted Children." Gifted Child Quarterly 8: 121-23; Autumn 1964.

Lists qualifications as (1) positive attitude toward special programs for gifted, (2) self-security, (3) sense of humor, (4) flexibility, (5) alertness, (6) belief in individual differences, (7) high intelligence, (8) creativity, (9) strong subject matter background, (10) wide background of general knowledge, (11) belief in setting standards of excellence, (12) dedicated, (13) understand causes of achievement, (14) democratic in classroom management.

Mitterling, P. I., editor. "College Honors Programs." Superior Student (924 Broadway, University of Colorado, Boulder, Colorado).

Listed under this heading are citations of various programs at the colleges noted below in the above journal for volume, number, and page: Abroad 4:6:18, 4:3:2. Arkansas 4:6:6. Brooklyn 4:2:21, 5:4:12. Brown 5:4:18. California 5:4:18. Colorado 4:4:13, 5:4:18, 4:2:15. Columbia 4:2:10. Conference on 4:5:all, 4:3:17. Cornell 4:8:14. Engineering 5:6:26. Harvard 5:4:3. Illinois 4:6:2, 4:7:11. Index 4:9:13. Kansas 5:4:18. Listing of Colleges 4:6:22, 4:9:13. Louisville 5:4:18. Math. 5:6:27. Medicine 5:6:24. Michigan 4:7:8. Missouri 5:4:18. New York 4:7:27. Ohio 4:4:27. Pacific Northwest 4:6:19. Princeton 4:7:14. Research on 4:5:13. St. Louis 4:5:13. Stetson 5:4:18. Tulane 5:4:18. Washington 5:4:18. Wesleyan 4:4:10. Yale 4:6:14.

Mitterling, P. I., editor. "Programs for Superior Students in High School." Superior Student 6: 1: 32-70; December 1963.

A very full listing of programs for able students by states, mostly connected with advanced placement although enrichment, grouping, special schools, and some acceleration practices are noted.

Moise, E. "The New Mathematics Program." School Review 70: 82-101; 1962.

A report on the policies and curricular recommendations of the Commission on Mathematics set up by the College Entrance Examination Board. Some recommendations are as follows:

Grade 9 - Introduction to algebra, set theory.

Grade 10 - Geometry: plane, solid, coordinate.

Grade 11 - Algebra: analytic, geometry, trigonometry.

Grade 12 - First semester - Elementary functions.

Second semester - 1. Introductory statistics, or
2. Modern algebra.

Mooney, R. L. "A Conceptual Model for Integrating Four Approaches to the Identification of Creative Talent." (pp. 331-40) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963a.

Four approaches (1) product, (2) process, (3) person, and (4) environment of creativity are analyzed.

Mooney, R. L. "Creation and Teaching." In McDaniel, E. D., editor. Creativity and College Teaching 35. (Bulletin of the Bureau of the School Service, Lexington, Kentucky: University of Kentucky.) 1963b.

An examination of the process of creation in the mind of a creative person by examining his characteristics and nature. The organism must have openness, centering, ordering and selecting.

Moore, L. B. "Creative Action--the Evaluation, Development, and Use of Ideas." (pp. 297-304) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.

Methods of developing creativity in a course for research personnel includes discussion of "buzz" groups, "stop and go" brainstorming and the "Phillips 66" technique.

Morrill, M. B., editor. The Superior and Gifted Student Project and Cullowhee: A Follow-Up Study. Cullowhee: Western Carolina College Guidance Clinic, 1964.

Latest information on Cullowhee Program includes 180 pages of explanation and follow-up data. Previous efforts included reports of a special summer program in 1958, and a report to the commission to study public school education of talented children in North Carolina in 1960.

Morris, Ruby. A Comparative Analysis of Selected Characteristics of Intellectually Superior Female Students Who Persist and Those Who do not Persist in an Advanced Placement Program. Unpublished doctoral thesis, Denton: North Texas State University, in process, 1963.

Morrow, W. R., and Wilson, R. C. "Family Relations of Bright High-Achieving and Under-Achieving High School Boys." Child Development 32: 501-10; 1961. Also Psychological Abstracts 36: 4FG01M, 1962.

Family relations of 48 high school boys of superior intelligence making high grades were compared with those of a group making mediocre or poor grades, equated for (1) grade in high school, (2) socioeconomic status, and (3) intelligence. The main measuring instrument was a set of 6-item questionnaires scaled (with a 4-point scale per item) on which each subject was asked to describe his family relations. Bright achievers' parents engage in more sharing of activities, ideas, and confidences, and are more approving, affectionate, and encouraging concerning achievement.

Mosing, L. W. "Developments of a Multi-media Creativity Test." Dissertation Abstracts 19: 2137; 1959.

Creativity was found related to the number and variety of associative responses made by persons to commonly experienced stimuli.

Mosteller, Polly R. A Study of Children's Art in Aesthetic Terms of Grade Levels II, IV and VI--as Related to Their School Achievement, Intelligence, Personal-Social Adjustment and Physical Development. Unpublished doctoral thesis, Detroit, Michigan: Wayne State University, 1962.

Mueller, Mary. Factors Affecting Achievement of Gifted Underachievers. Unpublished doctoral thesis, Chicago, Illinois: Loyola University, in process, 1963.

Mueller, R. J. "Can the Public School Foster Creativity?" Saturday Review 48-50; December 19, 1964.

Doubts that conformist tendencies in public education will allow creativity to be encouraged.

Mullins, C. J. "Selection of Creative Personnel." Personnel Journal 39: 12-13; 1960.

Guilford's tests correlated with both supervisors ratings and number of publications.

Mullins, C. J. "Current Studies of the Personnel Research Laboratory in Creativity." (pp. 316-35) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

Reports on four studies: (1) prediction of future creativity of young officers, (2) prediction of high school marks by creativity tests, (3) peer predictions of originality, and (4) identifying accurate raters of originality.

Murphy, G. "Freeing Intelligence." Childhood Education 8: 363; April 1963.

Intelligence is a potentiality to be achieved; it needs to be freed to be more creative. (Introduction to a symposium.)

Myden, W. "Interpretation and Evaluation of Certain Personality Characteristics Involved in Creative Production." Perceptual Motor Skills 9: 139-58; 1959. (Cf. Dissertation Abstracts 17: 897-98; 1957.)

Rorschach protocols of 20 artists vs. 20 business leaders led to characterization of artist as a person of superior intelligence who functions close to his potential. He is intellectually oriented to the outer world with a rich inner life. Results support Freud's notion that creative persons have easier access to primary process, less repression and more available psychological energy.

Myers, G. C. "Parents and the Gifted Child." Education 79: 17-18; September 1958.

A short article that offers advice to parents who suspect they have a gifted child. It also includes guides to follow before and after the child has entered school.

Myers, K. C. "The Relationship of Special Programming for Gifted Children to Parent Attitude toward Schools." Unpublished Ed.D. thesis, Stanford, California: Stanford University, 1963. Dissertation Abstracts 24: 1034; 1964.

Attitude of parents found influenced by educational experiences of their children.

Myers, K. C. "The Factors of Imagination." Childhood Education 8: 378-81; April 1963.

A discussion of creativity factors as delineated by J. P. Guilford and others. (Part of a symposium.)

Myers, R. E., and Torrance, E. P. "Can Teachers Encourage Creative Thinking?" Educational Leadership 19: 156-59; December 1961a.

Many teachers cannot because of values and temperamental predispositions that oppose innovation. Although they may agree in principle to a pupil's novel idea or unexpected question, they may be made so uncomfortable that they miss the point, change the subject, or frustrate the child. A teacher needs both to appreciate and tolerate creative thinking if he is to foster it.

Suggests the following principles: (1) Treat questionnaires with respect. (2) Treat imaginative ideas with respect. (3) Show your pupils that their ideas have value. (4) Occasionally have the students do something "for practice" without threat of evaluation. (5) Tie in evaluation with cause and consequences.

Myers, R. E., and Torrance, E. P. Teacher's Manual for Invitations to Thinking and Doing. Eugene, Oregon: Perceptive Publishing Co. (2795-1/2 Central Boulevard), 1961b.

A teacher's manual to go with the workbook. Explains the exercises.

Myers, R. E., and Torrance, E. P. Invitations to Thinking and Doing. Eugene, Oregon: Perceptive Publishing Co. (2795-1/2 Central Boulevard), 1961c.

A workbook of 60 pages designed for elementary teachers who wish to work creatively with children. Consists of an initiating activity, a pupil-involvement activity, and a follow-up activity for each of 26 units in language arts at about the 5th grade level.

Myers, R. E., and Torrance, E. P. Invitations to Speaking and Writing Creatively. (Workbook.) Eugene, Oregon: Perceptive Publishing Co. (2795-1/2 Central Boulevard), 1962.

Another workbook for developing the creativity of elementary school children in speaking and writing. Similar in style to Invitations for Thinking and Doing but different in content.

Myers, R. E., and Torrance, E. P. Can You Imagine? Eugene, Oregon: Perceptive Publishing Co. (2795-1/2 Central Boulevard), 1963.

Another booklet useful in developing creativity, this one especially valuable for primary and younger elementary school children in imagination-stimulation.

Myers, S. S. "The Kinds of Thinking Required in Current Mathematics Tests." New Jersey Mathematics Teacher 28: 11-15; May 1961a.

New types of mathematics achievement test questions are given and discussed.

Myers, S. S. "Published Evaluation Materials." (Chapter 6 and the appendix) in Evaluation in Mathematics. 26th Yearbook of the National Council of Teachers of Mathematics. Washington, D. C.: the Council, 1961b.

Discusses selection of published mathematics tests for schools, what type of test to be picked, values of published mathematics tests and basis for decision to use a published test. Instructions of how to use a manual of published mathematics tests are given. Also includes an annotated bibliography of published mathematics tests.

National Council of Teachers of Mathematics. An Analysis of New Mathematics Programs. Washington, D. C.: the Council, 1963a.

A report of the National Council of Teachers of Mathematics Committee on the Analysis of Experimental Mathematics Programs. Eight programs are analyzed for content and method.

National Council of Teachers of Mathematics. Enrichment Mathematics for the Grades. 27th Yearbook. Washington, D. C.: the Council, 1963b.

Enrichment ideas for talented students in the elementary and junior high school years. Extensive bibliographies.

Neff, H. B. "A Study of the Gifted Child in Church." Gifted Child Quarterly 5: 47-51; Summer 1961.

A survey by a minister of what the church and Sunday school are doing for the gifted child (very little).

Neff, H. B. "Educational Attitudes of High Ability Students." Gifted Child Quarterly 8: 36-37; Spring 1964.

Follow-up of winners of Ohio scholarship awards found only 40% reacting positively to high school education, and 30% very negative. The small high school graduates were especially critical.

Newell, A., and others. "The Process of Creative Thinking." (pp. 63-119) in Gruber, H. E., and others, editors. Contemporary Approaches to Creative Thinking. New York: Atherton Press, 1963.

Creative activity appears to be a special case of problem solving characterized by novelty, unconventionality, persistence, and difficulty. Discusses the logical heuristics of problem solving and planning applicable to computer functioning. This development is then used to elucidate (a) the use of imagery in problem solving, (b) the relation of unconventionality to creativity, and (c) the role of hindsight in the discovery of new heuristics.

Newell, J. M. "An Investigation of Performance on Measures of Creativity by 'High' and 'Low' Risk College Admissions." Medford, Massachusetts: Tufts University (Lincoln-Filene Center), 1964. (Mimeo.)

No significant differences were found between high and low SAT students in small sample research on creative performance.

Newland, T. E. "Programs for the Superior: Happenstancical or Conceptual?" Teachers College Record 62: 513-23; April 1961. (Cf. [pp. 156-70] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

An attack on shoddy methods of identification and research. Suggests four steps to improve methods as (1) sounder philosophy of education, (2) better content and methods in teacher training, (3) better definitions, and (4) total program planning.

Newland, T. E. "Some Observations on Essential Qualifications of Teachers of the Mentally Superior." Exceptional Children 29: 111-15; November 1962.

Discusses personal and professional characteristics of such teachers.

Newland, T. E., and Meeker, Mary. "Binet Behavior Samplings and Guilford's Structure of the Intellect." Journal of School Psychology 2: 55-59; Winter 1963-1964.

An initial attempt to assign Binet items to the various Guilford factors of the structure of intellect model.

Newland, T. E. "The Gifted in the High School." High School Journal 48: 76-81, November 1964.

Discusses the problems arising from lack of integration of programs for the able between elementary and secondary school.

Nichols, R. C. "Parental Attitudes of Mothers of Intelligent Adolescents and the Creativity of Their Children." Evanston, Illinois: National Merit Scholarship Corporation, 1963. (Mimeo.)

Authoritarian child-rearing attitudes of the mothers of Merit finalists were negatively related to the creativity and originality of the child, but positively related to academic performance.

Nichols, R. C., and Davis, J. A. "Characteristics of Students of High Academic Aptitude." Personnel and Guidance Journal 42: 794-800; April 1964a.

Substantial differences occur between high aptitude students and those of average ability. Differences occurred in: personality, attitudes, interests, career plans. These differences were not due to the effect of socioeconomic status, but were the result of intelligence.

Nichols, R. C. "Effects of Various College Characteristics on Student Aptitude Test Scores." Journal of Education Psychology 55: 45-54; 1964b.

A sample of 356 National Merit Finalists attending 91 colleges was used to assess the effects of colleges on Student Graduate Record Examination performance. Precollege characteristics of the students were controlled by multiple partial correlation and by modifications of this technique. Colleges tended to influence the Verbal and Quantitative scores of the students in opposite directions. Northeastern men's colleges tended to increase Verbal relative to Quantitative while technical institutes and state universities tended to increase Quantitative relative to Verbal. The student's major field of study had a similar reciprocal effect on the Verbal and Quantitative scores, but most of the differences between colleges remained when the effect of major field of study was controlled. The size of the college effects was small relative to the variability attributable to differ between students which existed before students entered college.

Nichols, R. C. "Birth Order and Intelligence." Evanston, Illinois: National Merit Scholarship Corporation, 1964c. (Mimeo.)

A review of the literature and a study of the birth order of 1,618 Merit finalists suggests that earlier born children in a family are more variable in intelligence than later born resulting in increased concentration of the early born at very high and very low ability levels.

Nichols, R. C. "Career Decisions of Very Able Students." Science 144: 1315-19; 1964d.

Study of trends in career choices of Merit semifinalists 1957-63 revealed a declining interest in business, engineering, journals, and physical science, and an increasing interest in biology, languages, history, mathematics and social science. Changes in major field while in college for 6,661 semifinalists showed net losses for education, engineering, medicine, music and physics, and net gains for English, history, languages, philosophy, psychology and political science.

Nichols, R. C., and Holland, J. L. "The Selection of High Aptitude High School Graduates for Maximum Achievement in College." Personnel and Guidance Journal 43: 33-40; September 1964e.

Nine alternative methods were used to select National Merit Finalists for maximum achievement during the first year of college. Conclusions were: (a) Additional selection on aptitude using either the same or a different test does not appreciably improve selection for high-level college performance. (b) Selection on the basis of high school rank produces students who demonstrate superior academic performance, but not necessarily other kinds of achievement. (c) Selection on the basis of a broad range of high school achievements results in a broad range of achievement in college without lowering the level of academic performance. (d) The addition to the high school achievement measures of personality and interest variables tends to decrease selection efficiency. (e) Committees analyzing all available measures may select students for academic achievement better than the best available objective method, but the evidence on this is not conclusive because of a difference in selection ratios. The selection committee, however, appears to be less effective than the best objective methods in identifying students with potential for extra-curricular achievement in college.

Nicholson, P. J., III. "An Experimental Investigation of the Effects of Training upon Creativity." Unpublished Ed.D. thesis, Houston, Texas: University of Houston, 1959. Dissertation Abstracts 20: 3; 1959.

Effects of training 32 subjects by administration of Guilford's Consequences Test after training using six different methods compared with controls showed significant difference in the production of remote ideas.

Nicklin, Helen. An Investigation of Selected Co-ordinate College-High School Honors Programs. Unpublished Ed.D. thesis, Los Angeles: University of Southern California, 1964.

Study describes two Los Angeles co-ordinate high school college programs, one at UCLA, one at Harbor College, and gives views of participants, principals, and teachers, and critique: "specific benefits."

Norman, R. D., and Clark, Betty. "Age, Sex, I. Q. and Achievement Patterns in Achieving and Non-Achieving Gifted Children." Exceptional Children 29: 116-23, November 1962.

Achievers had significantly higher language totals and NA's had significantly higher NL totals of groups matched in I. Q. and compared on achievement. Achievers were also younger.

Nuss, E. M. "An Exploration of the Relationship between Creativity and Certain Personal-Social Variables Among 8th Grade Pupils." Unpublished Ed.D. thesis, College Park: University of Maryland, 1961. Dissertation Abstracts 22: 3045; 1962.

High creative pupils were found to rank higher in social acceptance, display higher intelligence, higher achievement and come from higher SES homes than low creatives.

Nydes, J. "Creativity and Psychotherapy." Psychoanal Review 49: 29-33; 1962.

"The truly creative seem to have the capacity to tolerate and override anxiety, to integrate and admit into awareness an unusual depth and intensity of conflicting reality without being overwhelmed by panic or losing touch with reality." Creativity may be both a constructive way of resolving inner conflict and a reaction against an unhappy, neurotic adjustment. The true creative artist achieves insulation from competitiveness by engaging in unconscious competition with an ego-ideal of his own choice.

Nymann, Janet. The Relationship of Creativity in the Written Composition of Gifted Children to Their Loci of Evaluation and Control. Unpublished doctoral thesis, Lawrence: University of Kansas, in process, 1963.

Oakes, C. R., and Plessas, G. P. "A Language Study of Selected Early Readers." California Journal of Educational Research 14: 178; September 1963.

Early readers can be described as using a predominance of simple sentences without phrases in their verbal expressions. This conclusion is based on the analysis of the fifty verbal expressions from each child which revealed that 44.3% of the expressions were simple sentences without phrases. Of the various types of sentences used by the students, the elaborated sentence was used least.

Early readers used more verbs than any other part of speech. Verbs accounted for 24.8% of the 6,889 words that were analyzed. Using the mean length of the five largest sentences as a basis, early readers demonstrated much greater language maturity than the children in Templin's study. The mean length of the five longest sentences in the present study was 20.8 words compared to a mean of 13.57 in Templin's study.

The girls exhibited slightly greater advancement in all aspects of language development than boys even though the girls were slightly younger.

Ogden, J. A. A Study of the Interrelationships of High Creativity, Curiosity, Intelligence and Achievement and Emotional Handicap. (Research Study No. 1.) Unpublished doctoral thesis, Greeley: Colorado State College, 1963. Dissertation Abstracts 24: 1887; 1963.

Nine percent of sample were emotionally handicapped; these had significantly lower intelligence, less curiosity, and lower achievement, and were more often male. No significant difference in percent of emotionally handicapped among the very highly gifted.

Ohlsen, M. M., and Proff, F. C. The Extent to Which Group Counseling Improves the Academic and Personal Adjustment of Underachieving Gifted Adolescents. (CRP No. 623.) Urbana: University of Illinois, College of Education, 1960.

Material from nine papers by various associates under this general heading find little evidence of change in underachievers after an 8-week group counseling session. Other more technical aspects of the problem were also investigated with more positive results. 170 pages, many tables and references.

Ojemann, R. H. "Development Factors Related to Productive Thinking." Iowa City: Iowa State University, 1963. (Mimeo.) (Cf. Bish, C.E., 1965.)

Paper produced for conference on productive thinking points out that non-productive thinking arises from erroneous assumptions. Strong feelings of insecurity and inadequacy restrict productive thinking. Learning to think in terms of remote consequences valuable. Educational stimulation seen as capable of modifying onset of Piaget stages.

Oliver, W. R., and Horgan, Anne. "The Teacher of the Gifted." (pp. 289-90) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963. Brief list of characteristics required.

Olsen, W. A., and others. "The Measurement of Creativity in Machine Design." Journal of Applied Psychology 41: 297-302; 1957.

Describes development of a battery of 4 measures for discriminating creative from non-creative machine designers.

Olshin, G. M. "The Relationship Among Selected Subject Variables and Level of Creativity." Unpublished Ed.D. thesis, Athens: University of Georgia, 1963. Dissertation Abstracts 24: 2365; 1964.

Analysis of relation of intelligence, age, and sex to creativity level finds the first two related but not the third.

Olson, W. L. A Study of the Interrationships of Creativity, Curiosity, Emotional Handicap, Achievement, and Intelligence as Found in Low-Achieving Students. (Research Study No. 1.) Unpublished doctoral thesis, Greeley: Colorado State College, 1963. Dissertation Abstracts 24: 1483; 1963.

More low achievers were emotionally handicapped. Low achievement scores are better indicators of emotional trouble than low scores on creativity, curiosity or intelligence. A larger percent of boys were found. Test measures of curiosity, creativity and intelligence showed little overlap.

Orr, D. B. "Opportunities for Research on the Education of the Gifted Students." (pp. 67-82) in The Gifted Student. Cooperative Research Monograph, No. 2. Washington, D. C.: U. S. Office of Education, 1960.

A description of the opportunities for continuing research offered by "Project Talent."

Orr, D. B. "Project Talent: A National Inventory of Aptitudes and Abilities." Phi Delta Kappan 13: 237-43, March 1961.

Explanation of the longitudinal project of J. C. Flanagan.

Osborn, A. F. Applied Imagination: Principles and Procedures of Creative Problem Solving. (Revised Edition) New York: Charles Scribner's Sons, 1957.

A popular manual of 28 chapters and 400 pages on how to become more creative. The creative process, group creativity, brainstorming, handicaps to creative performance, methods of increasing creative output are described in this useful handbook which has gone through 14 printings.

Osborn, A. F. "Developments in Creative Education." (pp. 19-29) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.

Address to conference on problem solving by founder of Creative Education Foundation. An excellent overview of subject as of 1960. Discusses brainstorming and other applications.

Osborn, A. F. The Creative Education Movement (as of 1964). Buffalo, New York: The Creative Education Foundation (1614 Rand Bldg.), 1964.

Booklet of 48 pages describes research, basic principles, separate courses, institutes, creatively oriented courses, at what age should training begin, creative teaching, group brainstorming, creativity in business, in government, in the free world, creativity as criterion for college admission, the future of creativity.

Parloff, M. B., and Datta, Lois-Ellin. "Personality Characteristics of the Potentially Creative Scientist." In Masserman, J. H., editor. Science and Psychoanalysis (Vol. 8). New York: Grune and Stratton, 1965.

An ongoing study of potentially creative persons using IPAR material. Creative groups appear to share a high sense of personal worth, independent thinking, dominance, persistence and social initiative. They are self-acceptant and more than typically opinionated, stubborn, headstrong, and rebellious.

Parnes, S. J., and Meadow, A. "Effects of 'Brainstorming' Instructions on Creative Problem Solving by Trained and Untrained Subjects." Journal of Educational Psychology 58: 171-74; 1960a.

Significantly more good ideas were produced under brainstorming instructions than without them. Subjects trained in creative problem-solving produced better ideas. There was correlation between quantity and quality of ideas.

Parnes, S. J., and Meadow, A. "Evaluation of Persistence of Effects Produced by a Creative Problem Solving Course." Psychological Report 7: 357-61; 1960b.

Experimental subjects out performed controls in all six measures. Increased productivity present for a period of 8 months after completion of course.

Parnes, S. J. "Effects of Extended Effort in Creative Problem-Solving." Journal of Educational Psychology 52: 117-22; 1961.

Good ideas appeared more significant in the final third of the subjects' tests. Extended effort seen as rewarding.

Parnes, S. J. "Can Creativity be Increased?" Personnel Administration 25: 6: 2-9, 1962a. (See also [pp. 185-91] in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.)

Specialized education measurably improves creativity in problem-solving. The gap between an individual's innate creative talent and his creative output can be narrowed by training in creative thinking.

Parnes, S. J. "Do You Really Understand Brainstorming?" (pp. 283-90) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962b.

A careful explanation of brainstorming with answers to some criticisms.

Parnes, S. J. "The Creative Problem-Solving Course and Institute at the University of Buffalo." (pp. 307-23) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962c.

Describes the course and institute in Creative Problem Solving.

Parnes, S. J., and Harding, H. F., editors. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962d.

The most valuable book of readings in Creativity--mainly industrially oriented. Contains 29 selections in 380 pages with several appendices. Readings are organized into sections, but are mainly useful for historical and heuristic significance. Good introductory continuity.

Parnes, S. J. "Education and Creativity." Teachers College Record 64: 331-39; 1963a.

Points out that creativity can be improved by various educational experiences. More stimulation of creativity in students is seen as contributing to their better mental health as well as better cognitive functioning.

Parnes, S. J. "A Deferrment of Judgment Principle: A Clarification of the Literature." Psychological Report 12: 521-22; 1963b.

Distinguishes between the principle of deferred judgment and brainstorming.

Parnes, S. J., and Meadow, A. "Development of Individual Creative Talent." (pp. 311-20) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963c.

Evaluation of a course in brainstorming and development of creative ability.

Parnes, S. J. Bibliography re Nature and Nurture of Creative Behavior. Buffalo, New York: The Creative Education Foundation (1614 Rand Bldg.), 1964a.

An unannotated bibliography of some 600 items divided into three sections: (1) books and publications; (2) articles; and (3) dissertations.

Parnes, S. J. "Research on Developing Creative Behavior." (pp. 145-69) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964b.

Details of the creative problem-solving course at the University of Buffalo and brainstorming.

Paschal, Elizabeth. Encouraging the Excellent. New York: The Fund for the Advancement of Education, 1960.

An 80-page pamphlet detailing some of the Ford Foundation efforts at better articulation between school and college. Considerable material on advanced placement, loss on early admission to college. Enrichment or acceleration programs at Portland, San Angelo, San Bernardino, Hicksville, Oneida County, Louisville, Briarcliffe are described. Also included are honors programs at Brooklyn College and Seattle University, summer secondary programs in mathematics and science, and information about scholarship aid.

Passow, A. H., and others. "Enriched Mathematics for Gifted High School Students." Educational Leadership 18: 442-49; April 1961.

A report of the Cheltenham mathematics study suggests that there are real values in acceleration and enrichment of content under grouping.

Passow, A. H., and others. The Gifted: Digests of Important Studies. Washington, D. C.: National Education Association, Council on Exceptional Children, 1962a.

Excellent collection of one-page abstracts of important studies with commentary in four areas:

1. CHARACTERISTICS (Getzels, Haggard, Hollingworth, Holland, Roe, Strang, Terman, Torrance, Warren).
2. IDENTIFICATION (Davis, Pagnato).
3. ACHIEVEMENT (Barrett, Conklin, Goldberg, Nason, Pierce, Shaw, Tannenbaum, Wilson).
4. PROGRAMS (Abramson, California, Ford, Gallagher, Goldberg, Hobson, Justman, Keys, Mann, Portland).

Passow, A. H. "The Maze of the Research on Ability Grouping." Educational Forum 26: 281-88; March 1962b. (Cf. [pp. 238-48] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

An excellent review of ability grouping studies together with reasons why they turn up such conflicting results.

Passow, A. H., and Goldberg, Miriam. "Study of Underachieving Gifted." (pp. 198-202) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963. (Cf. Educational Leadership 15: 121-25; 1958.)

Report of the DeWitt Clinton High School Guidance Study which found that when gifted underachievers made improvement it was (a) with sympathetic teacher-counselor, and (b) with an opportunity to relearn basic skills.

Patterson, C. H. "Counseling Underachievers!" Urbana: University of Illinois, 1961. (Mimeo.)

Well-documented review of literature.

Paulus, V. "A Study of the Levels of Aspiration of Gifted Pupils and their Parents with Reference to the Achievement of Gifted Pupils." Unpublished Ed.D. thesis, Eugene: University of Oregon, 1962. Dissertation Abstracts 23: 2015; 1963. University Microfilms, Inc., 62-5842.

With N=31, study has some findings about discrepancy scores between parents and children on motor and verbal tests.

Pelz, D. C. "Relationships between Measures of Scientific Performance and other Variables." (pp. 302-11) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

Differences between high and low laboratory performance teams analyzed.

Pennsylvania, Commonwealth of. Guide to Planning for Able Pupils. (pp. 3-4) in Curriculum Development Series No. 2. Harrisburg, Pennsylvania: Department of Public Instruction, 1962.

Some guidance needs of gifted students are presented for consideration in this general bulletin about planning programs.

Pepinsky, Pauline. "The Social Dialectic of Productive Non-Conformity." Merrill-Palmer Quarterly 7: 128-37, 1961. (Cf. Gifted Child Quarterly 4: 81-85; Winter 1960.)

Report on research on non-conformity stresses interactions which produce social leadership.

Peppin, B. H. Parental Understanding, Parental Acceptance, and the Self Concept of Children as a Function of Academic Over- and Under-Achievement. Unpublished doctoral thesis, Claremont, California: Claremont Graduate School, 1963. Dissertation Abstracts 24: 4422; 1963. University Microfilms, Inc., 63-249.

Parent child relationship is positively related to ability of child to achieve.

Perkins, Ruby. "The Writing of Gifted Children Can be Improved." Gifted Child Quarterly 6: 128-29; Winter 1962.

Suggestions by teacher for improving the penmanship of bright children.

Perry, J. H. A Study of Educational Opportunities Offered More Able Children in Selected White Public Schools in Louisiana. Unpublished doctoral thesis, Baton Rouge: Louisiana State University, in process, 1963.

Peters, H. J., and Farwell, Gail F. "Dimensions of the Superior Student." Clearing House 35: 339-41, February 1959.

Discusses several of the personal factors besides native ability which contribute to the achievement of the gifted. Factors include love of surprise of learning, ability to concentrate, ability to generalize, spontaneity, originality, desire for learning, encouragement from others, freedom from fear, and the willingness to risk failure through experimenting.

Peters, H. J., and others. Achievement-Under-Achievement: Patterns of Academic Expectancy. Columbus: The Ohio State University Research Foundation, January 1960a.

A comprehensive personal-interview-questionnaire-survey study of 12th- and 7th-grade achievers and under-achievers in the Upper Arlington Schools, Columbus, Ohio. Cumulative record data, standardized test scores, sociometric data, and interview and questionnaire data on school impressions, future plans, extra-curricular activities, and home backgrounds of the achievers and under-achievers were compared for the two grade groups. Achievers and under-achievers differed significantly in more than thirty variables in the two grades.

Peters, H. J. "Humor and the Superior Student." Peabody Journal of Education 37: 229-31; January 1960b.

Presents the thesis that a keen sense of humor in a child may be evidence of high intelligence. Several studies of humor are cited to support the thesis. A bibliography is included.

Petersen, H., and others. "Determination of 'Structure of Intellect' Abilities Involved in Ninth Grade Algebra and General Mathematics." Los Angeles: University of Southern California, Psychological Laboratory, Report No. 31, October 1963. (Mimeo.)

Study to determine the effects of structure of intellect factors in 9th grade algebra found 6 involved in basic math and 10 in accelerated algebra.

Peterson, J. "The Researcher and the Underachiever: Never the Twain Shall Meet." Phi Delta Kappan 14: 379-81; May 1963.

Critical review of studies with numerous citations.

Petrich, P. "A Profile of the Creative Mind." Bulletin of the National Association of Secondary-School Principals 47: 72-73; December 1963.

Report of a six-year study by the University of California on the creative person including leaders in their fields, i. e., writers, research scientists, mathematicians, architects, etc. who were recognized as creative people. Concludes that creative persons are intelligent, independent, curious, skeptical, emotionally committed to their work, aesthetically sensitive, introverted, non-conformist, occasionally egotistical, usually actuated by a sense of destiny.

Pfeiffer, Isobel. "A Summer Culture Class." Clearing House 35: 413-16; 1961.

Describes a summer enrichment program in Kent, Ohio for gifted high school students.

Phillips, B. N. "Sex, Social Class and Anxiety as Sources of Variation in School Achievement." Journal of Educational Psychology 53: 316-22; 1962.

The hypothesis that social class interacts with sex and anxiety to produce differences in school achievement was tested utilizing a sample of 759 adolescents classified into 8 subsamples involving 2 levels of anxiety and social class and both sexes. Eight measures of school achievement were employed, including standardized tests and teacher grades. The results supported 2 major findings of previous research: females had higher anxiety scores than males, and highly anxious subjects had lower achievement and intelligence scores. Both 1st and 2nd order interactions between sex, social class and anxiety were found. Difficulties were encountered in integrating these findings into anxiety theory and certain proposals are offered to accomplish this.

Phillips, W., editor. Art and Psychoanalysis. Cleveland: World Book Co., 1963.

A 533-page Meriden Book M161 traces development of artistic creativity out of psychoanalytic framework.

Pielstick, N. L. "Gifted Children and Learning Experiences." Journal of Educational Research 57: 125-30; November 1963.

Describes a course on inquiry training with gifted children as part of the de Kalb, Illinois experiment. The development of divergent thinking and creativity was also attempted. The writer concludes: "the most profitable course for research is the creation of ways to structure learning situations which will permit the excitement of discovery and disencumber thinking.

Pierce, J. V. "The Educational Motivation Patterns of Superior High School Students Who Do and Who Do Not Achieve." Washington, D. C.: U. S. Office of Education (OE-20023), Cooperative Research Program Summary (project 208), 1959.

Two of 5 hypotheses confirmed on need achievement, high achievers appeared better adjusted, came from homes with strong father figure and higher socioeconomic status, had better educated parents, were more responsible, were engaged in more education-related hobbies, were more often first born.

Piers, Ellen, and others. "The Identification of Creativity in Adolescents." Journal of Educational Psychology 51: 346-51; December 1960.

Seven Guilford Creativity Tests were given 114 junior high students of above average IQ and achievement and results compared with teacher ratings of creativity and with each other. Tests of originality correlated more highly than ideational fluency. Teacher ratings were not consistent. These tests seem as suitable for younger groups as for Air Force Cadets.

Pilch, Mary M., consultant. "An Early Admissions Program." State of Minnesota, Department of Education, Division of Instruction, Elementary Section (Code 38B-222), October 1962.

Committee report on school planning for adopting an early admission policy in Minnesota schools concludes "research evidence leaves little doubt that early admission is beneficial." (18 references.)

Pincus, M. Providing for our Gifted Children. New York: Board of Education, City of New York, 1961.

A 48-page booklet gives curriculum suggestions in language arts, mathematics, music, science and social studies for elementary children. Short Bibliography.

Pine, F. "Thematic Drive Content and Creativity." Journal of Personnel 27: 136-51; 1959.

Higher quality literary products include more drive content than did lower quality productions. Controlled drive expression also correlated with quality of production. The creative person seems more receptive to inner and outer experiences.

Pippert, R., and Archer, S. "A Comparison of Two Methods for Classifying Underachievers with Respect to Selected Criteria." Personnel and Guidance Journal 41: 788-91; May 1963.

From a population of 126 ninth grade students scoring 110 or over on the Otis, underachievers were identified: (a) by low GPA or (b) by low achievement test scores. Neither method identified the under-achievers by the other method.

Plaut, R. L. "Conference on the Gifted Negro Student." Superior Student 3: 3; April 1960.

Report of the conference and several papers and symposia reports such as "Developing the Talented in Culturally Deprived Areas"; "The New York Higher Horizon Program"; etc.

Plowman, P. D., and Rice, J. P. "A Progress Report on Programs for Mentally Gifted Minors in California Schools." California Schools 34: 3: 3-18; March 1963a.

Describes model programs and gives cost breakdown, etc.

Plowman, P. D., and Rice, J. P. "Evaluating Educational and Counseling Programs for Gifted Children." Sacramento, California: California State Department of Education (Project Talent), March 2, 1963b. (Mimeo.) (Also in "Revised Guidelines for Establishing Programs for Mentally Gifted Minors," same source, 1964.)

Sound notes on this subject built around Gallagher's article pointing out specious methods of evaluation, and suggesting procedures for evaluation.

Plowman, P. D., and Rice, J. P. "Recent Developments in Education for Gifted Pupils in California." California Education 1: January 1964a.

Describes ongoing California program for gifted in an interim report.

Plowman, P. D., and Rice, J. P. "Revised Guidelines for Establishing and Evaluating Programs for Mentally Gifted Minors." Sacramento, California: California State Department of Education, California Project Talent, June 1964b. (Mimeo.)

Contents: Minimum standards for identification, criteria for excess cost reimbursement, criteria for teacher selection, correspondence courses, six state identified programs and their adaptations for certain schools, bibliography and appendix. The appendix includes: "Identification and Case Study Procedures," by J. P. Rice; "Evaluating Educational and Counseling Progress," by the authors; "Secondary Programs," by Paul Plowman, and four models for curriculum building and evaluation based on the Bloom Taxonomy and the Guilford Structure of Intellect.

Pogue, Betty Caskey. A Study to Determine Whether or Not There is a Relationship between Creativity and Self Image. Unpublished doctoral thesis, Muncie, Indiana: Ball State Teachers College, in process, 1963.

Porter, R. B. "A Comparative Investigation of the Personality of Sixth Grade Gifted Children and a Norm Group of Children." Journal of Educational Research 58: 132-34; November 1964.

Using the Cattell 16PF High School Personality Questionnaire (HSPQ) gifted boys were found more conscientious, tougher, individually resourceful, (+B, I, Q₂, -G) than controls, while girls were found more submissive, conscientious, excitable (+B, G, Q₃, -E) than controls.

Porter, R. M. "Saturday Seminars Stimulate Students." New York State Education 49: 21-23; 1962.

Brief description of rural seminar program offered to bright high school students.

Porter, R. M. "Enrichment for Gifted Rural Children." Gifted Child Quarterly 8: 123-33; Autumn 1964.

A description of rural New York State programs for able students.

Portland Schools. "The Research Program." Gifted Child in Portland, Portland School District No. 1; 115-38; 1959. (Cf. [pp. 458-80] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

A review of research conducted in connection with the Portland School Program for the gifted.

Powell, W. J., and Jourard, S. M. "Some Objective Evidence of Immaturity in Underachieving College Students." Journal of Counseling Psychology 10: 276-82; 1963.

Twenty male and twenty female college underachievers were compared with similar numbers of adequately achieving students on measures of self-disclosure to parents and friends and security. There were no differences in mean scores between the underachieving and achieving students. However, significant correlations were found between measures of disclosure to parents and security, among the under-achievers only. In the achieving groups, significant correlations were found between disclosure to peers and security. The findings were construed as evidence for lack of emancipation from parents on the part of the underachievers.

Press, Billie K. "Education of the Gifted in the U. S. S. R." Exceptional Children 30: 241-44; February 1964.

An account of Russian education for able children which meets their needs through special interest groups outside of school.

Pressey, S. L. "Education Acceleration: Occasional Procedure or Major Issue?" (pp. 104-11) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963. (Cf. Personnel and Guidance Journal 41: 12-17; September 1962.)

Gives powerful arguments in support of acceleration.

Price, Marian. "The Relationship of Age, Mental Age, IQ and Sex to Divergent Thinking." Unpublished Ph.D. thesis, Claremont, California: Claremont Graduate School, 1962. Dissertation Abstracts 23: 4422; 1963. University Microfilms, Inc., 62-1230. IQ found associated with divergent thinking up to 130 IQ which appears a good cut point for selection of potentially creative individuals. Boys do not appear more capable of divergent thinking than girls.

Prince, G. M. "Synectics." Industrial Research; December 1, 1962.

Synectics holds that people are much more creative if they understand the psychological processes by which they operate, and if they know and understand the importance on non-rational aspects of creativity. An ideal synectics group has four to six members with widely different backgrounds working as a team with a rotated leader.

Purkey, W. W. An Investigation of Personality Characteristics of High School Students Testing at Superior Levels of Intelligence. Unpublished Ed.D. thesis, Charlottesville: University of Virginia, 1964.

Purkey tests three hypotheses with respect to intellectually superior adolescents: (a) that they are superior in psychological adjustment; (b) that they think themselves to be superior in psychological adjustment; and (c) that they possess superior insight into themselves. The California Psychological Inventory (Gough) is used as the basic instrument, with a "self-ranking inventory" closely modeled thereafter for testing self-understanding. Findings: (1) proved true; (2) proved false; and (3) as appraised by congruence between test measures and self-rating, proved false.

Radcliffe, Shirley, and Hatch, W. A. Advanced Standing. (New Dimensions of Higher Education No. 8.) Washington, D. C.: Office of Education, OE-54014, 1961.

Advanced standing bulletin of 24 pages and about 60 citations notes that advanced standing programs enable superior students to receive appropriate placement and college credit for work completed in high school. Mostly on the Advanced Placement Program, but others noted.

Rambo, Florence L. Pupil Characteristics Related to Creativity. Unpublished doctoral thesis, Athens: University of Georgia, in process, 1963.

Raubinger, F. M., president. Guidelines and Opportunities for Leadership in the Education of Gifted Children and Youth. Washington, D. C.: National Education Association, Council of Chief State School Officers, 1962.

A short policy statement which goes into identification, programs, and evaluation.

Raudsepp, E. Managing Creative Scientists and Engineers. New York: Macmillan & Co., 1963.

Ray, P. B. "A Descriptive Study of Certain Characteristics of 'High Creative' Freshmen Arts College Students as Compared with 'High Academic Potential' Students." Unpublished Ph.D. thesis, Minneapolis: University of Minnesota, 1962. Dissertation Abstracts 24: 1924; 1964.

Little relationship found between creative ability and achievement in college freshmen.

Reed, E. G. Developing Creative Talent. New York: Vantage Press, 1962.

Reich, M. "Acceleration or Enrichment in Junior High Schools." Bulletin of the National Association of Secondary-School Principals 47: 287: 19-21; December 1963.

A two-year program of acceleration vs. a three-year program of enrichment in New York City's junior high schools is described. Author favors the enrichment program.

Repucci, L. C. "The Predictive Value of Unreduced Tension as Related to Creativity." Unpublished Ph.D. thesis, Detroit, Michigan: Wayne State University, 1962. Dissertation Abstracts 23: 4423; 1963. (Cf. The Dow Chemical Company, Midland, Michigan.)

Purpose of study is to see if creative scientists can be differentiated from non-creative scientists in terms of how they react to unsolved problems. Hypothesis is that they will, as opposed to non-creative scientists: (1) experience tension when faced with unsolved problem; (2) direct their energies toward reducing this tension; and (3) must solve the problem in order to reduce the tension.

Repucci, L. C. "What Research Reveals About Creativity." Hydrocarbon Processing and Petroleum Refiner 41: 10: 112-18; October 1962.

Discusses the factors that make up creativity, the ten characteristics of the creative person, the barriers to creativity, and a discussion of Guilford. It further discusses the environment of the creative scientist, and the personality styles among scientists. An excellent study report of biographical data that produces creativity.

Repucci, L. C. "Increasing Creative Performance." Midland, Michigan: The Dow Chemical Company, August 24, 1964. (Paper presented at American Psychological Association seminar in Los Angeles on September 6, 1964.)

Discussion of following issues:

1. Is creativity training useful?
2. What is the best approach to creativity training?
3. How effective is creativity training?
4. Who should do creativity training.

Reyburn, J. N. A Study of Teaching to Develop Divergent Thinking through Oral and Written Language and Its Effect on Originality and Ideational Fluency. Unpublished doctoral thesis, University of California, 1963.

Reynolds, M. C., editor. Early School Admission for Mentally Advanced Children. Washington, D. C.: National Education Association, 1962.

Booklet of 6 chapters and bibliography includes (1) Introduction; (2) Review of Research; (3) Hobson on the Brookline, Massachusetts Plan; (4) Miller on the Evanston Plan; (5) Holbrook on the Minneapolis Plan; and (6) Hiskey on the Nebraska Plan.

Reynolds, M. C. "Some Research-Related Thoughts on the Education of the Gifted." Exceptional Children 30: 6-12; September 1963.

Thoughtful paper analyzes trend of recent research toward broadening conception of ability.

Rhodes, J. M. "The Dynamics of Creativity: An Interpretation of the Literature on Creativity with a Proposed Procedure for Objective Research." Dissertation Abstracts 17: 96; 1957.

Review of literature plus proposal for research.

Rhodes, M. "An Analysis of Creativity." Phi Delta Kappan 42: 305-10; April 1961.

Semi-review type article discusses history of interest in subject, characteristics of creative people, process and products of creative thinking. Considerable quoting, but no bibliography.

Rice, J. P., and Plowman, P. D. "A Demonstration Center with Differential Programming for Gifted Pupils in California, Grades One through Nine." California Schools 34: 139-54, May 1963

Describes the California Cooperative Research Project featuring enrichment, acceleration, counseling and special classes, and including training programs in summer school for teachers of gifted children.

Richards, J. M., Jr., and others. "Creative Tests and Teacher and Self-Judgements of Originality." Journal of Experimental Education 32: 281-85; Spring 1964.

Seventy-nine males, 40 females from a Salt Lake City public high school administered creativity tests (Guilford's) in the junior year; teacher ratings obtained on subjects in the senior year. Results did not confirm Getzel's and Jackson's conclusions that teachers favor intelligence and discriminate against creativity in either male or female subjects.

Riesman, D. "Varieties of Excellence." National Association of Women Deans and Counselors 21: 99-114; March 1958.

Takes a close look at our colleges and universities and what they have to offer. This examination suggests many criteria that should be used when the gifted student selects a college that will provide the environment in which he can really develop.

Ripple, R. E. "A Controlled Experiment in Acceleration from the Second to the Fourth Grade." Unpublished Ph.D. thesis, Madison: University of Wisconsin, 1961. Dissertation Abstracts 22: 1910; 1961. (Cf. Gifted Child Quarterly 5: 119-20, Winter 1961.)

The experiment was successful on all counts.

Ripple, R. E., and May, F. B. "Caution in Comparing Creativity and IQ." Psychological Report 10: 229-30; 1962. Also (pp. 324-26) in Ripple, R. E. Readings in Learning and Human Abilities. New York: Harper & Row, 1964.

"By correlating Otis IQ's and scores on creative-thinking tests by members of several seventh grade groups, homogeneous or heterogeneous with respect to IQ, it was demonstrated that the low correlation of these measures reported by other investigators may well be due in part to the restricted IQ ranges in their samples."

Ripple, R. E., editor. Readings in Learning and Human Abilities. New York: Harper & Row, 1964.

Book of 600 pages and 49 selections chapters on ability and process which include a number of articles listed separately herein including those by Guilford, Klausmeier, MacKinnon, and others.

Rivlen, L. G. "Creativity and the Self-Attitude and Sociability of High School Students." Journal of Educational Psychology 50: 147-52; August 1959.

The nominated creative was sociable, confident and more popular. He came from upper class parents more often.

Roe, Anne. The Making of a Scientist. New York: Dodd Mead & Co., 1953.

A clinical study of 64 American biologists, physical scientists, and social scientists. Background, projective techniques, and other personality tests plus interviews were used in 4 separate studies.

Roe, Anne. "Personal Problems and Science." (pp. 132-38) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

A discussion of the psychological climate in the scientists' childhood.

Roeper, G., and Annemarie. City and Country School of Bloomfield Hills. Bloomfield Hills, Michigan, 1964.

Bulletin of information gives history, development and present program and activities of this private elementary school for the gifted.

Rogers, C. R. "Towards a Theory of Creativity." (pp. 55-68) in Anderson, H. H., editor. Creativity and Its Cultivation. New York: Harper Bros., 1959. (Cf. [pp. 64-72] in Parnes, S. J., and Harding, H. F., editors. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.)

Hypothesizes that those who exhibit openness, internal locus of evaluation, and ability to toy with material will be more creative than controls, and that the group in which the leader allows greater psychological safety and freedom will be more creative than controls.

Rogers, C. R. "Toward a Theory of Creativity." (pp. 347-59) in On Becoming a Person. Boston: Houghton Mifflin, 1961. (Cf. also Review of General Semantics 11: 249-60; 1964.)

Sets forth a tentative theory of creativity, the nature of the creative act, the conditions under which it occurs and the manner in which it may constructively be fostered. Pointed up are: (1) The Social Need, or the price we pay for a lack of creativity; (2) The Creative Process; (3) Motivation for Creativity, man's tendency to become his potentialities; (4) Inner Conditions of Constructive Creativity; (5) The Creative Act and Its Concomitants; and (6) Conditions Fostering Constructive Creativity.

Rosen, B. C. "Race, Ethnicity, and the Achievement Syndrome." American Sociological Review 24: 47-60; 1959.

"The disparity between the vertical mobility rates of some racial and ethnic groups can, in part, be explained as a function of their dissimilar psychological and cultural orientation towards achievement.

"Three components of this orientation-achievement motivation, achievement values and educational-occupational aspirations which have important consequences for social mobility in this country are examined."

Rosen, J. G. "The Barron-Welsh Art Scale as a Predictor of Originality and Level of Ability Among Artists." Journal of Applied Psychology 39: 366-67; 1955.

Scale had a significant relationship both to rated originality and grades in the student group. Both students and artists earned higher scores than non-artists. (Cf. Welsh's earlier study *ibid.* 31: 278-82; 1947.)

Rossmann, J. The Psychology of the Inventor. (3rd Edition.) New Hyde Park, New York: University Books, 1964.

Anecdotes from 710 inventors form the research backbone of this book, and well delineate the wide divergencies in the creative process. A distinction is made between inventor and scientist, and characteristics of each are described.

Rothney, J. W. M. "Problems, Procedures and Results in Research on the Guidance of Superior Students." Madison: University of Wisconsin, 1961. (Mimeo.)

Explains the operation of the Wisconsin Laboratory for superior students.

Rothney, J. W. M. "How the University of Wisconsin Helps Test and Guide Superior High School Students." Superior Student 6:1: 24-28; December 1963.

Description of the laboratory at Madison, Wisconsin.

Rothney, J. W. M., and Sanborn, M. P. "Promising Practices in the Education of Superior Students: A Demonstration Project."

Madison: University of Wisconsin. U. S. Office of Education Cooperative Research Grant D-119, due 1966?

Roughton, E. L. Creativity as a Factor in Reading Achievement.

Unpublished doctoral thesis, Columbia: University of South Carolina, 1963.

Rowna, Helen, editor. "Creativity." (Symposium Issue.) Carnegie Corporation of New York Quarterly 9:3: 1-8; July 1961.

Several short articles discuss the creative individual and the creative process.

Rubin, L. Nurturing Classroom Creativity. Ventura, California: Ventura County Schools, 1960.

Useful 100-page pamphlet starts with assumptions about creativity and characteristics of creative individual; discusses research and the creative process and facilitating conditions; turns to teaching for creativity: brainstorming, stimulating sensitivity, encouraging ideational fluency, originality, redefinition ability, etc.; and concludes with notes from conference on creativity by Lessinger, Simpson, MacKinnon, and Sundberg.

Rubin, L. J. "Creativity and the Curriculum." Phi Delta Kappan 44: 438-40; June 1963.

A curriculum to encourage creativeness holds value for all students, not only the creatively gifted minority. "Important first observations are : (1) self-direction need not be unduly permissive; (2) able students are motivated by conditions of reward, i. e., 'exhibition of their knowledge and being able to appear knowledgeable'; (3) willingness to introduce 'unknowns' into the curriculum will offer the student a feeling for creation and knowledge; (4) if distinctly creative his inquisitiveness and inventiveness may be stimulated; if relatively uncreative, his search for an answer can teach him much concerning organization and knowledge and effective methods of finding solutions."

If the curriculum is arranged so the student repetitively engages in as many kinds of thinking as possible, it will probably: (a) provide him with a basis for recognizing opportunities for transfer of learning; (b) expand his capacity for responding in several ways to simple phenomenon; (c) improve his choice of an effective way of thinking about a task; and (d) provide him with cognitive alternatives he might have ignored.

Rugg, H. Imagination. New York: Harper & Row, 1963.

Posthumously published book discloses author's considerable interest in creative imagination as well-spring of accomplishment.

Runquist, O. "The Hamline University Class Plan for St. Paul Developmental Program Students." St. Paul, Minnesota: Hamline University, (n.d.).

A report of a three-year experiment in college classes for talented high school students in mathematics and science.

Rupp, M. A. "Brainstorming Attitude." School Arts 59:10: 5-8; June 1960.

Popular cogent exposition of brainstorming as applied to individual and group creativity. To get the feeling of release we need receptivity, open mindedness, enthusiasm, stimulation, concentration and expression.

Russell, D. W. "School-time Apprenticeships." Clearing House 38: 417-19; March 1964.

Description of out-of-school professional on-the-job experiences for gifted high school students.

Rust, V. I. "Factor Analyses of Three Tests of Critical Thinking." Journal of Experimental Education 29: 177-82; 1960.

The Watson-Glaser, American Council Psychological Examination, and a test on the Principles of Critical Thinking were factor analyzed and no strong general factors were found.

Rutherford, J. M. "Personality Correlates of Creativity." Dissertation Abstracts 20: 4434; 1960.

Three characteristics of creativity are: (1) ability to differentiate various aspects of the problem, (2) openness of the self to experience, and (3) self-strength.

Sagen, H. B., and Yamamoto, K. "The Minnesota Studies of Creative Thinking: Implications for High School Counselors." Minnesota Counselor 1: 21-24; 1961.

Discussion of the guidance implications of Torrance's work.

Sample, R. E. "A Comparison of the Effects of Two Teaching Methods on General Creativity in Teacher Preparation for Elementary Art." Unpublished Ph.D. thesis, Minneapolis: University of Minnesota, 1961. Dissertation Abstracts 22: 3940; 1962.

Changes in methods course in teacher preparation did promote creativity of teachers.

Samstad, G. I. "General Electric's Creative Courses." (pp. 333-39) in Parnes, S. J., and Harding, H. F., editors. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.

Describes the General Electric Program for developing creativity, including personnel and program structure.

Sandberg, J. H. Introduction to the Social Sciences: An Independent Study Course for Gifted High School Students. Unpublished Ed. D. thesis, Charlottesville: University of Virginia, 1962.

Based on repeated observations that "social studies" in the secondary school do not adequately reflect social science, this work orients the student to five social sciences (Anthropology, Economics, Political Science, Psychology and Sociology) as to the nature of each discipline, representative problems therein, and relevant scientific methodology through which each is developed. The work is organized for practical use as "enrichment" for gifted high school students in a year long course of "Independent Study."

Sargent, H. Administrative Problems in the Initiation of Selected Procedures for Academically Talented Students in Secondary Schools of Pennsylvania. Unpublished doctoral thesis, University Park: Pennsylvania State University, in process, 1963.

Saslaw, M. S. "Gifted Young Scientists Laboratory Research Program." Gifted Child Quarterly 5:3-4; Spring 1961.

An account of the efforts of the National Children's Cardiac Center, Miami, Florida to interest gifted children in laboratory research.

Saunders, D. C. Elementary Education and the Academically Talented Pupil. Washington, D. C.: National Education Association, Project for the Academically Talented Pupil, 1961.

A 96-page booklet of 7 chapters discusses (1) frame of reference, (2) planning a good school program, (3) look at the academically talented, (4) identification, (5) curriculum, (6) organization, (7) administration.

Saunders, D. R. "Some Measures Related to Success and Placement in Basic Engineering Research and Development." (pp. 321-28) in Taylor, C. W., and Barron, F., editor. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

Tests of successful and other engineers in five large companies by ETS revealed personality differences.

Savard, W. G. "An Evaluation of the Second Year of an Ability Grouping Program." California Journal of Educational Research 12: 62-66; March 1961. (Cf. ibid., 11: 56-60; March 1960.)

Analysis by intelligence levels shows all differences favoring limited-range grouping, especially so at the lower levels.

Sayles, D. J. "Conservation of Talent: Can the Underachiever be Saved?" Unpublished doctoral thesis, New York: Columbia University, 1963. Dissertation Abstracts 24: 3235; 1963.

Possibly.

Saylor, G. "If Your Child Has Academic Talent." National Parent-Teacher 54: 7-9; January 1960.

Offers advice to parents of gifted children and tells of many ways that parents can provide a home atmosphere that will help to create a desire in the child for more learning.

Schaaf, W. L. "Mathematics for the Gifted: A Bibliography for the Grades." (pp. 6-14) in Enrichment Mathematics for the Grades. 27th Yearbook of the National Council of Teachers of Mathematics, Washington, D.C.: the Council, 1963.

Extensive bibliography under four headings:

1. General Education Discussion.
2. General Mathematical Discussion.
3. Kindergarten - Grade 8.
4. Grades 7 - 10; Junior High School.

Schell, J. S. "A Mandate for the Gifted." Gifted Child Quarterly 6: 19-21; Spring 1962.

Describes the Pennsylvania State Program.

Schimek, J. G. Creative Originality: Its Evaluation by the Use of Free Expression Tests. Unpublished doctoral thesis, Berkeley: University of California, 1954.

An early doctoral thesis on creativity measurement through free expression.

Schmadel, Elnora, and others. "Use of the Minnesota Test of Creative Thinking with a Sixth Grade Population." San Gabriel, California: San Gabriel School District, 1964. (Paper present at California Educational Research Association, Santa Barbara, 1964a.) (Mimeo.)

Schmadel, Elnora. "Evaluating Creative and Productive Thinking." San Gabriel, California: San Gabriel School District, 1964. (Mimeo.) (Paper presented at American Psychological Association, Los Angeles Convention, 1964b.)

An illustrative study of student behavior in response to a classroom climate which considers the student as a thinker. The material evaluated is a social science unit, with a double commentary alongside, one presenting techniques of evaluation, and the other measuring the effectiveness of the technique.

Schmadel, Elnora, and others. "A Comparison of Performance of Gifted and Non-Gifted Children on Selected Measures of Creativity." California Journal of Educational Research (in press).

The scores of 31 gifted children on Guilford's conceptual foresight (CMI), ideational fluency (DMU), originality (DMT), and sensitivity to problems (EMI), synthesis, and evaluation. Except on ideational fluency and the gifted mean exceeded the mean of the whole group by differences at the .01 level of significance.

Schmeding, R. W. "Group Intelligence Tests Scores of Gifted Children; Degree of Consistency and Factors Related to Consistency." Personnel and Guidance Journal 42: 991-96; June 1964.

Purpose was to determine the consistency of the group intelligence test scores, to examine the consistency of the group tests as means of identification of children with 120+ IQ, and to examine some of the variables that might bear a relationship to giftedness. Findings revealed that children who scored at or above 120 IQ at some point in subsequent testing seldom maintained this level. Little basis for expecting trustworthy early identification of gifted. Stability of marital status of parents, home and incidence of health problems were found to be unrelated to persistence in gifted category. Socioeconomic level of school was shown to be significant to number of gifted students that were identified.

Schreiber, D. "The Higher Horizons Program." Research Bulletin 4: 1-10. New York State School Boards Association, Inc., September 1962. (Cf. [pp. 147-56] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

A description and results obtained from the Higher Horizons Program of New York City, "a program to overcome the stifling of educational instruction in children from families struggling economically." The identification of the academically able among these children and instilling in them, the community and their parents the desirability of a college education for these children.

Schultz, J. A. "A Project in Group Counseling with High School Underachievers." Counselor Education and Supervision 3: 24-29; Fall 1963.

Describes a group counseling program with little evaluation of results.

Schwartz, W. P. "I Remember Spreyer School." Gifted Child Quarterly 6: 22-25; Spring 1962.

Former student recalls the experimental junior high school program for gifted children at a special New York school.

Sciortino, R. P. "Personality and Creative Abilities." Unpublished Ph.D. thesis, Columbus: Ohio State University, 1963. Dissertation Abstracts 24: 4784; 1964.

Factor analyses yielded 7 cognitive factors: adroitness, curiosity, pensivity, articulateness, eagerness, persuasiveness, productivity and 8 conative factors: motivation, liveliness, briskness, self-confidence, initiativeness, responsiveness, affectivity and decisiveness. Highs on the inventiveness variable scored significantly higher on adroitness, GPA and the Ohio State Psychological examination than lows.

Selig, K. "Personality Structure as Revealed by the Rorschach Technique of a Group of Children Who Test at or above 170 IQ in the 1957 Revision of the Stanford Binet Scale: Volumes I, V." Dissertation Abstracts 19: 3373-74; 1959; Psychological Abstracts 34: 4089; 1960.

Rorschach tests of 27 180 IQ New York children (1949) found high mental health. They were strong on creative imagination (M) and 19 other signs. The adjusted and maladjusted subgroups were substantially different, with the adjusted child having an advanced emotional development. This tends in the total group norms to hide the fact that some very bright children are not well adjusted.

Selye, H. From Dream to Discovery. New York: McGraw-Hill, Book Co., 1964.

Serene, M. F. "An Experiment in Motivational Counseling." Personnel and Guidance Journal 31: 319-24; 1953.

An early study to ascertain success of counseling students regarding poor grades and poor work and study habits in school. Interviews were set up with underachieving students. Emphasis was placed on proper ways to study. Challenge to student was to measure up to own capabilities. After completion of the year's work gap between capability and achievement was narrowed.

Shaw, M. C. "Attitudes and Child Rearing Practices of the Parents of Bright Academic Underachievers. U. S. Public Health Research Project, M-2843. Chico, California: Chico State College, 1960. (Mimeo.)

Lengthy report on 64 achievers vs. 51 underachievers in high school via parental interviews and PARI, in a study similar to that of Pierce and Bowman.

Shaw, M. C. "Definition and Identification of Academic Underachievers." Guidance for the Underachiever with Superior Ability. U. S. Office of Health, Education and Welfare 25: 15-30; 1961a. (Cf. [pp. 325-40] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

A general and detailed discussion of underachievement.

Shaw, M. C. Interrelationship of Selected Personality Factors to High Ability Underachieving School Children. Sacramento: California State Department of Public Health, Project 58-M-1, August 1961b.

This 400-page study used a large sample of children with over 115 IQ in the Contra Costa County elementary schools. Those with GPA's of 3.0 or more were named achievers, and those with GPA's of 2.8 or lower were called underachievers. The average GPA of the 74 schools ran from 1.8 to 3.8. Socioeconomic status was controlled by assigning each school a Warner number and then assuming that every gifted child in the school had this index. Q-sort, and Semantic Differential tests were used, but no consistent results were found. More careful controls on achievement and socioeconomic status might have helped.

Shaw, M. C. "Need Achievement Scales and Predictors of Academic Success." Journal of Educational Psychology 52: 282-85; December 1961c.

Found little relationship between need scales and academic success.

Shaw, M. C. "Group Counseling Experiment Fails to Aid Underachievers." California State Department of Education Bulletin 4; December 1962.

National Defense Education Act Contra Costa Study using Adlerian group counseling found no improvement in 9th grade under-achievers.

Shaw, M. C., and Alves, G. J. "The Self-Concept of Bright Under-achievers." Personnel and Guidance Journal 42: 401-02; December 1963.

Studied 78 top quarter senior high students performing in bottom half. Concluded that there is direct association between negative attitude and underachievement when ability is constant.

Shaw, M. C. "Note on Parent Attitudes toward Independence Training and the Academic Achievement of their Children." Journal of Educational Psychology 55: 371-74; December 1964.

Attitudes of parents of 64 achievers and 51 underachievers were compared on an Independence Training Inventory. The demands made by parents of achievers were more specific, parents of achievers wanted their children to learn to make their own decisions, and to be more adult in behavior. Parents of underachievers were concerned with having their children learn to protect their personal rights.

Shaw, M. C., and White, D. L. "The Relationship between Child-Parent Identification and Academic Underachievement." Journal of Clinical Psychology (in press, December 1964?).

Members of achiever families tend to agree more than opposites. Achievers whether male or female tend to perceive themselves as more like their like-sexed parent than underachievers. Parents in achieving families agree more than opposites.

Shea, P. D. Parental Influence on College Planning by Boys and Girls of High Ability During the Sixth to the Ninth Grades. Unpublished doctoral thesis, Cambridge, Massachusetts: Harvard University, in process, 1963.

Shelly, C. G. "Some Variables which Differentiate the Highly Intelligent and Highly Divergent Thinking Adolescent." Unpublished Ph.D. thesis, Storrs: University of Connecticut, 1961. Dissertation Abstracts 22: 2699; 1962.

Distinctive differences were found on all variables except measures of conformity.

Shepardson, Marie. Some Factors Related to Level of Achievement and Level of Educational and Vocational Goals of Intellectually Gifted Children. Unpublished doctoral thesis, Athens: University of Ohio, 1964.

Sherman, Vivian S. R. "Personality Correlates of Differential Performance on Intelligence and Creativity Tests." Unpublished Ed.D. thesis, Stanford, California: Stanford University, 1964.

Shertzer, B., editor. Working with Superior Students: Theories and Practices. Chicago: Science Research Associates, 1960.

A compilation of readings, not as comprehensive nor diversified as that of French. The 11 sections include 32 articles on talent, review of research, identification, programs, guidance, motivation, the teacher, community, and current practice.

Shipley, Ferne. "The Gifted Child in the Primary Grades." Gifted Child Quarterly 8: 9-11; Spring 1964.

General discussion of problems and procedure.

Shouksmith, G., and Taylor, J. W. "The Effect of Counseling on the Achievement of High-Ability Pupils." British Journal of Educational Psychology 34: 51-57; 1964.

The under-achievement of high-ability children is a growing and important problem. This paper reports the effect of counseling on the level of educational attainment of high-ability, under-achieving, intermediate-school pupils. Three matched groups of under-achieving pupils were chosen, known as the Counseling, Placebo and Control Groups, respectively. The Counseling group received non-directive counseling following the administration of a battery of tests. The Placebo group received the same tests but no counseling. The Control group received neither tests nor counseling. The results showed a significant difference in the achievement scores of the Counseling group over both control groups in 4 of the 6 tests. In the other two tests, differences approaching significant levels were obtained. This leads to the conclusion that counseling does have a positive effect on under-achieving pupils.

Shutes, R. E., director. "Students Identified as Gifted in Palo Alto." (pp. 9-12, 15) in Improving the Instructional Programs for Able Students, Summary No. 4. Palo Alto, California: Palo Alto Unified School District, November 1962.

The role of consultants and building coordinators in programs for the gifted in Palo Alto schools is clearly defined.

Simberg, A. L. "How to Understand, Support, and Encourage Creativity." Product Engineering 110-16; August 3, 1964. (Reprints: No. 740 from 330 West 42 Street, New York City, New York 10036.)

Management piece characterizes four foremen types and how they affect creativity of men under them. Article develops several practical principles for middle-management.

Simon, B., editor. "The Case for Non-Streaming: FORUM'S Evidence to the Plowden Committee." Forum 7:1: 1-4; Autumn 1960a. (United Kingdom: University of Leicester.)

The case for removing ability grouping from the English elementary schools.

Simon, B., editor. Non-Streaming in the Junior School. Leicester, England: P. S. W. Publications (71 Clarendon Park Road), 1964b.

Paperback on freeing the elementary school of ability grouping. Chapter I: The Case for Non-Streaming. Chapter II: Teachers and Children's Attitudes. Chapter III: Transition to Non-Streaming. Chapter IV: Problems of Non-Streaming.

Sims, E. J. A Study of Problems in Determining Content in School-College Programs of Advanced Placement; With Implications for Springfield College. Unpublished doctoral thesis, New York: Columbia University, in process, 1963.

Singer, J. L. "Exploring Man's Imaginative World." Teachers College Record 66: 165-79; November 1964.

The genesis of fantasy and its relation to close parental identification is explored, and the importance of fantasy in developing imagination of a non-schizoid type which blossoms into creativity is traced. (36 citations.)

Sister Josephina. "Teachers' Reactions to Gifted Pupils." Gifted Child Quarterly 5: 42-47; Summer 1961.

Questionnaire given 66 teachers discovered their reasons for wanting or not wanting to teach gifted children, also revealed other feelings about gifted children in their classes.

Slavin, J. G. Paternal Identification Related to Achievement Level: Perceptions of Parents by Underachieving and Achieving Fifth Grade Children. Unpublished doctoral thesis, College Park: University of Maryland, in process, 1963.

Slom, G. "Industrial Arts and the Academically Talented." Education 36: 33-36; 1961.

Description of Fullerton, California program for high school students.

Smith, E. H. "State Level Educational Services for Gifted Pupils." Journal of Exception Children 27: 511-16; May 1961.

Survey of state action by Washington State Department writer.

Smith, L. M., and Wientge, K. M. "Some Observations on the Vocational Interests of Gifted Adolescents in an Intensive Academic Experience." Personnel and Guidance Journal 42: 15-19; September 1963.

Expressed interest and inventoried interest (SVIB) was not generally significant for 60 male seniors and juniors in a summer high school program of vocational exploration. Little change evident. Implications of this definitive article are that gifted students need careful vocational guidance.

Smith, P., editor. Creativity: An Examination of the Creative Process. A Report on the Third Communications Conference of the Art Directors Club of New York. New York: Hastings House Publishers, Inc., 1959.

Creative process discussed by representatives from business and industry, the arts, education and science who conclude that the approach to new ideas in each field is similar, though the knowledge demanded may vary by field.

Smith, R. N. "Perceptions of Self, Others and Certain Environmental Aspects of High and Low Divergent, Intellectually Superior Children." Unpublished Ed.D. thesis, Urbana: University of Illinois, 1962. Dissertation Abstracts 23: 4232; 1963. University Microfilms, Inc., 63-3338.

Results suggest that high divergent children give responses on the sentence completion test which reveal a more autonomous nature, with less anxiety and higher positive values on work and school performance.

Smith, W. J., and others. "The Prediction of Research Competence and Creativity from Personal History." Journal of Applied Psychology 45: 59-62; February 1961.

Oil company employees tested on history Q. resulted in 59 items which correlated .5 with creativity ratings. High creatives work faster, more readily take advantage of opportunities, and see achievements as greater.

Snygg, D. "Creative Teaching in a Mechanized Classroom." High School Journal 44: 538; November 1960.

Somewhat hortatory statement on the advisability of adopting programmed learning to creative needs of students.

Sochen, June: A Resume of Selected Research on Superior and Talented High School Students. Chicago, Illinois: North Central Association of Colleges and Secondary Schools, Superior and Talented Student Project (5454 South Short Drive), 1961.

Brochure of 21 pages states many research findings as they relate to characteristics, identification, motivation, and guidance of able students.

Sommers, W. S. "The Influence of Selected Teaching Methods in the Development of Creative Thinking." Unpublished Ph.D. thesis, Minneapolis: University of Minnesota, 1961. Dissertation Abstracts 22: 3954; 1962.

It is possible by specific adaptation in methods courses to improve creative thinking in an industrial arts lab course.

Sorgatz, W. A Study of the Motivating Effect of the Electric Typewriter on the Academic Performance of High Achieving Sixth and Seventh Grade Pupils. Unpublished doctoral thesis, Tempe: Arizona State University, in process, 1963.

Spaulding, R. L. "Affective Dimensions of Creative Process." Gifted Child Quarterly 7: 150-57; 1963.

A scholarly exposition of the kind of classroom climate which helps facilitate creativity. These affective components help self-esteem and provide an atmosphere in which risk-taking can occur. They are not sufficient however, without cognitive stimulation.

Spector, N. "Factorial Dimensions of Creativity." Unpublished Ed.D. thesis, Austin: University of Texas, 1963. Dissertation Abstracts 24: 2980; 1964.

Factor analyses on creative vs. non-creative 7th graders as measured by tests of divergent thinking established 4 dimensions: (a) affective (ways of coping), (b) motivational (ways of achieving), (c) reputational (ways of being valued), (d) cognitive (ways of thinking).

Spielberger, C. D., and Weitz, H. "Improving the Academic Performance of Anxious College Freshmen: A Group-Counseling Approach to the Prevention of Underachievement." Psychological Monographs: General and Applied 78: 13: 1-20; 1964.

Anxious college freshmen were invited early in their first semester to participate in a special academic orientation program. Those who volunteered were divided into experimental (E) and control (C) groups. Students in the E group were assigned to counseling groups which met each week of the first semester. The C group was invited to participate in counseling groups during the following semester along with those members of the E group who wished to continue. Students who regularly attended first semester counseling groups made higher grades than students who either did not regularly attend or who were assigned to the C group. The effects of counseling during the second semester were obscured by the adverse influence of fraternity affiliation on grades. The influence of systematic trends in university admission policies on the relationship between anxiety and academic performance were discussed, as were differences in the relationship between anxiety and grades for anxious students who volunteered to participate in the counseling groups as compared to non-volunteers.

Sprague, Elizabeth. "An Informal Non-Structured Approach to Working with the Gifted." Gifted Child Quarterly 6: 50-53; Summer 1962.

An account of some informal guidance sessions with gifted youngsters who were problems in school.

Sprecher, T. B. "A Proposal for Identifying the Meaning of Creativity." (pp. 77-88) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963. (Cf. Journal of Applied Psychology 43: 141-48, 1959 from original Ph.D. thesis, An Investigation of Criteria of Creativity in Engineers, College Park: University of Maryland, 1957.)

Goal: to study the variety of meanings assigned to "creativity." Engineers gave reasons why they called particular men "creative"; their verbal descriptions were analyzed with 12 characteristics of "creativity" (independent, novel, ideas like problems, valuable answers, analyses, many solutions, technical competence, plans, energetic, perservers, communicates, personal relations) for form a Criterion Analysis form.

Sprecher, T. B. "Creativity and Individual Differences in Criteria." (pp. 336-50) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

An account of creativity research among engineers at Western Electric Company.

Sprinthall, N. A. "A Comparison of Values among Teachers, Academic Underachievers and Achievers." Journal of Experimental Education (in press).

Stanley, W. H. The Relationship of Certain Conative Factors of Intellectually Gifted Students to Academic Success. Unpublished doctoral thesis, Denton: North Texas State University, in process, 1963.

Stapp, R. V. "Relationship of Measures of Creativity, General Intelligence and Memory." Unpublished Ed.D. thesis, University Park: Pennsylvania State University, 1963. Dissertation Abstracts 24: 5258; 1964.

Found no significant correlation between the three variables. Art students scored higher on creativity and lower on memory, and vice versa for non-art students.

Stark, S. "Rorschach Movement and Bleuler's Three Kinds of Thinking: A Contribution to the Psychology of Creativity." Perceptual and Motor Skills 19: 959-67; 1964.

Suggests that autistic thinking, inner creation, and physiognomic perception, all associated with M Rorschach responses are characteristic of those who experience imaginatively, but not of those who are scientific innovators. Hence high M will be found in those whose creativity is not geared to reality.

Starkweather, Elizabeth, and Cowling, Frieda. "The Measurement of Conforming and Nonconforming behavior in Preschool Children." Stillwater: Oklahoma State University, Department of Family Relations, 1963. (Mimeo.)

Two tasks were developed for preschoolers which discriminated between children who were free to use either behavior and children who were compulsive conformists or non-conformists. One child in eight was consistently free in his use of conforming and non-conforming behavior.

Starkweather, Elizabeth. "Problems in the Measurement of Creativity in Preschool Children." Stillwater: Oklahoma State University, 1964. (Mimeo.)

Beyond obtaining the subjects and securing their cooperation the major problem is one of designing instruments. Abilities identified in older children may not be differentiated in the young child. Communication may be a problem. The child's answers often indicate possible solutions.

Stauffer, R. G. "Productive Reading-Thinking at the First Grade Level." Reading Teacher 13: 183-87, 1963.

A description of purpose-setting at the 1st grade level.

Stein, M. I., and Meer, B. "Perceptual Organization in a Study of Creativity." Journal of Psychology 37: 39-43; 1954.

More creative research chemists show a greater freedom in the offering of perceptual hypotheses and in the level of their responses than do uncreative colleagues.

Stein, M. I., and Henze, S. J. Creativity and the Individual: Summaries of Selected Literature in Psychology and Psychiatry. Glencoe, Illinois: The Free Press, 1960.

For criteria of a creative person, subjects were chosen by (1) scores of intelligence tests; (2) number of citations or lines concerning famous persons in histories or biographies; (3) judgement of professionally qualified people; (4) selection of "eminent" persons; and (5) persons in professions which require creative behavior. Factors motivating the creative are seen as: (a) pregenital drives; (b) defense mechanisms; (c) defense against defenses; (d) insanity; (e) sanity; (f) desire for immortality; (g) need for order; (h) significance of sublimation; and (i) importance of self-actualization.

Stein, M. I. "Creativity as an Intra- and Inter-Personal Process." (pp. 85-92) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.

A cultural and interpersonal atmosphere which produces creativity is discussed.

Stein, M. I. "A Transactional Approach to Creativity." (pp. 217-27) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

Creativity consists of predispositions which arise in the individual but is the resultant of processes of social transaction.

Stein, M. I. "The Creative Engineer." Product Engineering 117-23; August 3, 1964. (Reprints: No. 740, 330 West 42 Street, New York City, New York 10036)

Notes that research costs have skyrocketed in 30 years but patents increased only by 10%. Describes Murray's TAT tests on groups of engineers and sketches three types of creativities.

Steinberg, J. L., editor. Implications of Creativity Research. Los Angeles, California: Los Angeles State College, 1962.

Booklet reporting proceedings of conference contains "Creativity and our Future," by Guilford; "Implications of Research in Creativity," by Flanagan, plus other material including a 500-item unannotated bibliography.

Stephens, T. M., and Dizney, H. "The Frequency of Academic Underachievement among Elementary Pupils in Ohio Who Display High Scholastic Aptitude." Columbus, Ohio: State Board of Education, 1962.

Using highly sophisticated statistical techniques and definitions of underachievement the study found about 31% of the gifted in grade 4 and 20% in grade 7 to be underachievers. It concluded that incidence of underachievement is less than sometimes assumed, but is more frequent among highly gifted children. The size and per pupil expenditure does not seem related. There seems to be some reduction from 4th to 7th grades.

Stephens, T. M., and Gibson, A. R., editors. Acceleration and the Gifted. Columbus, Ohio: State Board of Education, 1963.

Excellent booklet on acceleration with articles by Pressey, Passow, Barbe, Stephens, Larson which are generally favorable, plus account of the Ohio Acceleration Project including accelerated arithmetic and advanced placement.

Sterling, V. B. "A Pilot Factor Analytic Study of Academic Motivation and Achievement Levels in Eleventh Grade Male Students." Unpublished Ph.D. thesis, East Lansing: Michigan State University, 1962. Dissertation Abstracts 24: 634; 1964.

Achievers show (1) long term academic involvement, (2) risk taking, (3) active experiencing, (4) long term work challenge, (5) abiding rewards interests, (6) long term mental activity, (7) maximum confidence, (8) individuality.

Stern, A. "Divergent Thinking in Educable Mentally Retarded Children Compared with Average and Superior Children." Unpublished Ed.D. Austin: University of Texas, 1963. Dissertation Abstracts 24: 2791; 1964.

When MR's were compared with other children of the same mental age on the Minnesota Studies of Creative Thinking they were found as flexible verbally and non-verbally, not lower non-verbally, but less original.

Stern, Helen. "Challenging the Underachieving Gifted Student: A Study of Programs in Thirty-Seven Schools. Nyack, New York: Nyack High School, 1961. (Mimeo.)

Most schools identified underachievers by checking IQ against teacher marks. The CTMM and the DAT were most used as tests. Underachievers received individual counseling in 21 systems, 17 referred them to school psychologists. The most frequent problem was a lack of a special program, the majority of the underachievers were in regular classes. Most schools wanted more guidance facilities.

Stern, Helen. "Guidance for the Gifted Underachiever in High School." (pp. 192-97) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963. (Cf. NEA Journal 51: 8: 24-26; November 1962.)

Suggestions for dealing with the underachiever.

Stetler, L. The Development of a Plan for the Collection, Centralization, Utilization, and Selected Analysis of Exceptional Child Pupil Data in Florida. Unpublished doctoral thesis, Syracuse, New York: Syracuse University, 1963.

Stewart, Evelyn Seeley. "The Big Question of Creativity." Parents Magazine 38: 62-64; June 1963.

What is it? Who has it? Can it be acquired? The author cites Dr. D. W. McKinnon's (U. C. Berkeley) definition of true creativity as involving: (1) response to an idea that is novel; (2) ability to adapt this idea to reality; (3) sustaining the original "insight," evaluating and elaborating it. She then reviews Dr. E. Paul Torrance's long list of characteristics of creativeness. Stressed is: the need for parents and teachers to learn how to foster creativity when and where it is. As he sees it, creativity can be developed. Everyone possesses to some degree, (a) the ability to be creative, depending on the way children are treated; and (b) the provision made possible in home and school for experiences and guidance which will free them to develop and function fully.

Stewart, L. H. "Selected Correlates of the Specialization Level Scale of the Strong Vocational Interest Blank." Personnel and Guidance Journal 42: 867-73; May 1964.

The specialization level scale originally developed to distinguish among physicians between specialists and general practitioners appears to predict upper professional level interests in other professional groups. Stewart shows it correlates positively with thinking introversion, complexity, originality, social maturity, and with SCAT and negatively with authoritarianism. He characterizes highs on it as reflective, independent, critical, liberal, democratic, creative, flexible, somewhat unconventional, receptive to new ideas and tolerant of ambiguity.

Stoltz, R. E. "Development of a Criterion of Research Productivity." Journal of Applied Psychology 42: 308-10; 1958.

Describes development of a forced choice value scale to determine productive research behavior.

Stone, E. F. "A Guide to Principles of Creativity in Teaching with Suggestions for Use in Elementary Social Studies." Unpublished Ed.D. thesis, New York: New York University, 1961. Dissertation Abstracts 22: 507; 1961.

Sets forth 15 principles for use by creative teacher in elementary school. No experimentation.

Stone, L. A., and Foster, J. M. "Academic Achievement as a Function of Psychological Needs." Personnel and Guidance Journal 43: 52-56; September 1964.

The Stern Activities Index (SAI) was administered to 1,568 entering freshmen students (945 males and 623 females) enrolling in 4 of the schools at Kansas State University. Product-moment correlations were computed between predicted grade-point average (GPA), obtained GPA, the difference between predicted and obtained GPA, and each of the 30 SAI need scales. Ten SAI scales were found to consistently correlate significantly with predicted GPA. A similar group of 9 SAI scales were found to consistently correlate significantly with obtained GPA. However, only 1 SAI scale was found which consistently correlated significantly with the difference between predicted and obtained GPA. Even though the relationship of this one scale was significant, meaningfully it was a low relationship. The possibility that scholastic aptitude measures may be confounded by personality aspects was discussed.

Strang, Ruth. "Creativity in the Elementary Classroom." (pp. 253-56) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963. (Cf. NEA Journal, March 1961.)

A discussion of how teachers can encourage and approve creativity in young children.

Strang, Ruth. "Self Concepts of Gifted Adolescents." High School Journal 48: 102-07; November 1964.

Short description of case studies of adolescent self-concepts.

Stroud, B. E. An Exploration of the Relationship Between Curiosity and Certain Intellectual Thinking Operations among Fifth-Grade Pupils. Unpublished doctoral thesis, Cleveland, Ohio: Western Reserve University, 1962.

Suchman, J. R. "Creative Growth and Conceptual Growth." Gifted Child Quarterly 6: 95-99; Autumn 1962.

Using creative thinking to promote conceptual growth while honored by lip service is not often practiced. One way to do this (via the Inquiry Training Program) is to make the teacher's role less directive and more responsive, to have the learner focus on a problem and allow him to gather data freely with the help but not the direction of the teacher. Rigging the classroom climate and the "payoff matrix" in such a way that children become willing to take risks in trying out new ideas in place of safer but more laborious methods is also useful.

Taba, Hilda. "Opportunities for Creativity in the Education of Exceptional Children." Exceptional Children 29: 247-56; February 1963.

"Planning for creativity involves: (a) organizing content so children are not so overwhelmed with assimilation that there is no room for thinking, and (b) organizing learning experiences to enhance opportunities for creativity and divergent thinking.

Taffel, A. "A Program for the Gifted at the Bronx High School of Science." Gifted Child Quarterly 5: 69-70; Summer 1961; also (pp. 364-66) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.

Description of the science program at this special school for the able.

Tauber, M. C. An Experimental Study of the Relationship Between Certain Selected Social and Emotional Factors and Ability Grouping of High School Students. University Microfilms, Inc., 63-1353.

Taylor, C. W. "Some Implications of Research Findings on Creativity." Art Education Bulletin 19: 4: 37-47; April 1962a.

Raises six issues in connection with the training of art students. Notes Eisner's thesis which asserts four types of creative behavior, as (1) boundary pushing, (2) inventing, (3) boundary breaking, and (4) aesthetic organization.

Taylor, C. W., and Holland, J. L. "Development and Application of Tests of Creativity." Review Educational Research 32: 91-102; 1962b.

Purpose of this report is to summarize present day knowledge from research and to indicate future areas of creativity research. Discusses the traditional measures of creativity and the present concepts of multi-dimensions of the mind, as well as the single-test studies of creativity. The works of Guilford, Stein, Cattell, Getzels and Jackson, Torrance and Taylor are discussed.

Taylor, C. W. "Many-Sided Intelligence." Childhood Education 8: 364-66; April 1963a.

Brings out difference between narrow and broad view of intellect. (Part of a symposium.)

Taylor, C. W. "The Dimension of Creative Ability in Adults." Paper presented at the National Education Association and National Magazine Publishers Conference of Creativity, New York, April 25, 1963b.

A general and somewhat popular overview of creativity studies in education.

Taylor, C. W. "Clues to Creative Thinking." The Instructor 73: 1: 5; September 1963c.

Defines the goal of this series of articles as bridging the gap between research and practice. Suggests the teacher might try a new approach in class each day for a week and should avoid falling into formal patterns of thinking. There seems to be a slump in creativity in the 4th grade.

Taylor, C. W. "Clues to Creative Teaching--the Creative Process and Education." The Instructor 73: 2: 5; November 1963d.

Suggests ideas for increasing creativity: designate to children if tasks are to be creative or imitative; design a sequence of tasks which become increasingly creative; give students take home problems to be thought about for a period of time. Teachers need to give students more time to just think; not necessarily always on a serious topic. Time is needed if creativity is a preconscious, non-verbal or preverbal, for it involves large sweeping, scanning, deep, diffused, free and powerful action of the mind. Defines the process of creativity as: Mental Labor; Quiescence; Illumination; and Deliberate Effort. During the incubation period the teacher should with different techniques; i. e., leave students alone; encourage them with words; point to progress, challenge or deliberate probes.

Taylor, C. W. "Clues to Creative Teaching-Knowledge and Creativity." The Instructor 73: 3: 5; December 1963e.

Sheer accumulation of knowledge is not enough to prepare for creativity. The procedure of using knowledge is as important, if not more so, than the actual knowledge. School programs only transmit knowledge and teachers should be aware of setting up a balance between transmission and creating. "...the relation between knowledge and creativity--to be able to get out to the edge of knowledge, to know where you are, and to function successfully there to move the frontiers of knowledge forward."

Taylor, C. W. "Challenges for Talent Search and for Education." (pp. 266-71) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc. 1963f.

Avers that current educational tests and tasks are inadequate both for identifying and developing creative potential.

Taylor, C. W. "The Creative Individual: A New Portrait in Giftedness." (pp. 233-39) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963g. (Cf. Educational Leadership 17: 7-12; October 1960.) (Cf. [pp. 169-84] in Parnes, S. J., and Harding, H. F., editors. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.)

A brief status of the art in 1960. Reviews the Utah conferences, intellectual traits, personality traits, and implications for education.

Taylor, C. W. "Some Possible Relations between Communication Abilities and Creative Abilities." (pp. 365-71) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963h.
Communication research provides clues for creativity research.

Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963i.

The book is a collection of papers selected from the Proceedings of the First, Second and Third University of Utah Conferences devoted to "The Identification of Creative Scientific Talent" supported by the National Science Foundation. There are 30 contributors whose papers are separately herein annotated. The emphasis is directed toward creativity as reflected in the activities, personal attributes and working environments of scientists. The last chapter contains an excellent summary of research, followed by a 500-item unannotated bibliography.

Taylor, C. W., and others. "The Creative and Other Contributions of One Sample of Research Scientists." (pp. 53-76) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963j.

Discusses (1) approaches to the contributions of scientists, (2) 15 categories of contributions, (3) organizational features, (4) other implications of the project, and (5) summary and conclusions.

Taylor, C. W. "Clues to Creative Thinking--Learning and Reading Creatively." The Instructor 73: 4: 5; January 1964a.

Students should be instructed to receive knowledge in creative ways. Some points to remember are: receiving knowledge in an "awe full" way may hamper using it creatively; children like to learn by discovering themselves; because of individual differences there is a need for a wide variety of stimulation. Pathfinding creativity requires an efficient input system. Any fixed ideas or self-imposed restrictions can reduce receiving and using information. Frame of mind seems to have significance, i. e., reading for memory or creativity seem to be different processes.

Taylor, C. W. "Clues to Creative Teaching--Listening Creatively." The Instructor 73: 5: 5; February 1964b.

It appears a great asset to be able to receive fully, without distortion, a rich variety of experience and information for creativity. Perhaps this ability can be developed by having students examine material for uncertainties and inconsistencies. In the preparatory stage it is also an asset to be able to perceive with broadly diffused attention--outward and inward. It is also important that internal storage of experience and materials occur so that mixing and blending occur. An ability to take a fresh view--step away and take a broad look--is valuable. Teachers might experiment by having students purposely listen for different reason; i. e., information, stimulate own ideas, etc.

Taylor, C. W. "Clues to Creative Teaching--Creativity and Expression." The Instructor 75: 6: 5; March 1964c.

A student who creates above and beyond or something different from what he has received is not necessarily being creative. This may be only a modification or distortion. A student must first learn how to output before he can be outwardly creative. Do we inhibit children's creativity with stressed patterns of expression? A main problem is that not all students with new ideas are able to express themselves well. Some inhibited children can overcome this through role-playing, puppets, etc. Different modes of expression are easier for different individuals: i.e., special, graphic, oral, non-verbal symbols. The stress in schools is on verbal expression, however, the teacher should make an effort to give students experiences in various forms of nonverbal expression as well; i.e., art, dance and music.

Taylor, C. W. "Clues to Creative Thinking--Developing Creative Thinking." The Instructor 73: 7: 5; April 1964d.

Teachers should try to think of pupils as "thinkers" not just "learners." Hutchinson's Study--students instructed under the "think and produce" process learn as much, if not more, as students under the "receive and produce" process. A second project at N.S.F. Summer Science Program showed that different characteristics caused different students to excel in "receive and produce" processes than in producing learned subject matter. Jablonski's Study--feels if children are ready to do research in the summer, why not do it in the winter as well. He found 4th, 5th and 6th graders were even capable of cancer research.

Taylor, C. W. "Clues to Creative Thinking--Evoking Creativity." The Instructor 73: 9: 5; June 1964e.

Only one out of every 15 to 20 teachers has the psychological make-up to be able to listen accurately to childrens' new ideas. This is an important asset for all teachers to develop in order to encourage creativity. "...Pensylvania State art educators learned teachers can have a positive effect on creativity by acting as an observer and feeding back to the student some information and evaluations...." However, it has been found that a positive effect results only if the student is allowed to decide himself how to use this information.

Taylor, C. W., editor. Creativity: Progress and Potential. New York: McGraw Hill Book Co., 1964f.

Results from 3 University of Utah research conferences on creativity held in 1955, 1957, and 1959 plus one follow-up conference in 1961. Three main themes: (1) Early Predictors of Creative Potential, (2) Influence of Educational Environment or Situational Factors on Creativity and (3) Obtaining Measureable Criteria of Creativity. Many recommendations to teachers for fostering creativity, and though the book's major orientation is toward the study of scientific creativity, there is some mention of creativity in other areas.

Taylor, C. W., editor. Widening Horizons in Creativity. (Proceedings of 1962 Utah Conference.) New York: John Wiley & Sons, Inc., 1964g.

Contents: I. Historical (Toynbee, Thurstone); II. Creative Process Studies (Ghiselin, Mednick, Hyman, Barron, Leary); III. Education and the Development of Creativity (Torrance, Parnes, Drevdahl, Harmon, Jablonski, Brust); IV. Criterion and Prediction Studies (Taylor, Guilford, Holland, Astin, Mullins, Sprecher); V. Creativity in Special Fields, Architects (MacKinnon); Visual Arts (Beittel); Advertising (Elliott), Leadership (Fiedler), Industry (McPherson, Datta). Separate articles herein annotated.

Taylor, C. W., and Ellison, R. L. "Predicting Creative Performance from Multiple Measures." (pp. 227-60) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964h.

A summary account of Taylor's work for NASA on the biographical inventory approach to creativity predictions.

Taylor, D. U., and others. "Does Group Participation When Using Brainstorming Facilitate or Inhibit Creative Thinking?" Travail Humain 24: 1-20; 1961.

In attempting to test high pressure creation of new ideas, 96 Yale students were tested singly and in groups of 4. There were significantly more ideas produced in groups, although 4 persons produced slightly less than twice the number produced by persons working alone.

Taylor, D. W. "Variables Related to Creativity and Productivity among Men in Two Research Laboratories." (pp. 228-50) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

Biographical inventory questionnaires (displayed in article) gave promising leads to creativity.

Taylor, J. D. A Study of Procedures and Practices in Education of Gifted Children. Unpublished doctoral thesis, Morgantown: University of West Virginia, 1964.

Taylor, R. G. "Personality Factors Associated with Scholastic Achievement." East Lansing: Michigan State University, 1961. (Mimeo.)

Research found 7 male factors (attitude towards school, compulsivity, authority relations, need affiliation, self-value, anxiety, internalized pressure); and 3 female ones: (1) fantasy, (2) school attitude, (3) compulsivity.

Taylor, Vi Marie. Determining the Creative Potential of Junior High School Students Through Measurement of Image-Conceptualization. Unpublished doctoral thesis, East Lansing: Michigan State University, in process, 1963.

Teed, H. T. "The Relationship of the Two-Dimensional and Three-Dimensional Creative Art Expressions of the Adolescent." Dissertation Abstracts 23: 3787-88; 1963.

Templeton, D. E. The Creative Process of Communication: An Examination of the Process of Analogizing of Students and Teachers and Its Implications in the Area of Creativity. Unpublished doctoral thesis, Minneapolis: University of Minnesota, 1963.

Thistlethwaite, D. L. "College Press and Student Achievement." Journal of Educational Psychology 50: 183-91; October 1959.

College faulties . and student culture play important roles in motivating undergraduates to seek advanced training. One type of college press inspires achievement in the natural sciences while a different type facilitates achievement in the arts, humanities, and social sciences.

Thistlethwaite, D. L. "The College Environment as a Determinant of Research Potentiality." (pp. 265-77) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963.

National Merit Scholarship Corporation report discusses productivity and climate of various colleges in effect on Merit Scholarship holders.

Thompson, J., and Meyer, L. H. "What Research Says About Acceleration." California Journal of Secondary Education 36: 301-05; May 1961.

Review of 21 citations finds acceleration generally favorable in early entrance to elementary school, acceleration in the grades, acceleration into college, and acceleration in college.

Thompson, J. M., and Finley, Carmen J. "A Further Comparison of the Intellectual Patterns of Gifted and Mentally Retarded Children." Exceptional Children 28: 379-88; March 1962.

Using the studies of Gallagher and Lucity and of Kincaid and Powers, the authors compared their results with a larger sample of gifted and retarded children. The results showed that a broad generalization may be made to the relative strengths of gifted as opposed to retarded children as groups--but that it may vary in an individual child. The results of the study tend to confirm the Gallagher and Lucito study and the Kincaid and Powers study and tend to confirm their findings of intellectual strengths and weaknesses of both retarded and gifted children, and the lack of similarity between their test patterning.

Thompson, J. M., and Finley, Carmen J. "An Abbreviated WISC for Use with Gifted Elementary School Children." California Journal of Educational Research 14: 167; September 1963.

An abbreviated scale of the WISC for use with gifted children was developed using multiple correlation techniques by selecting the combination of subtests which would best predict full scale IQ and at the same time economize the administration time. The 5 subtests selected were: SIMILARITIES, INFORMATION, PICTURE ARRANGEMENT, BLOCK DESIGN, and PICTURE COMPLETION.

The correlation between the sum of the 5 tests and the total full scale score was .75. The error of estimate in predicting full scale scores was 5.46 scaled score units or 3.96 IQ points. A regression equation was presented for predicting full scale scores. In order to simplify the computations using the short form a table of weighted subtest scores was prepared to accompany the abbreviated WISC protocol.

This short form of the WISC was then validated on 151 subjects. The correlation between actual and predicted full scale IQ's was .84. The predicted score came within four points of the actual score in 74% of the cases and within eight IQ points in all but 2% of the cases.

This abbreviated form of the WISC was presented as a valid predictor of full scale IQ with gifted children.

Thorndike, R. L. "The Measurement of Creativity." Teachers College Record 64: 422-24; 1963a.

Low correlations between subtests and between different tests of creativity suggest considerable tentativeness in using the word "creativity" as measured by tests now so labeled.

Thorndike, R. L. "Some Methodological Issues in the Study of Creativity." (pp. 40-54) in Gardner, E. F., chairman, Proceedings of the 1962 Invitational Conference on Testing Problems. Princeton, New Jersey: Educational Testing Service, 1963b.

Evidence presented suggests that there is a broad domain, distinct from the domain of the conventional intelligence tests, to which the designation "divergent thinking" or "creative thinking" might be applied.

Thorne, Alison. "Mothering the Gifted to Encourage Curiosity, Learning, and Creativity." Gifted Child Quarterly 7: 47-50; Summer 1963.

Contains practical hints about ways to stimulate gifted children from parental point of view.

Thurstone, L. L. "Criteria of Scientific Success and the Selection of Scientific Talent." (pp. 10-16) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

Proposes several hypotheses for better selection of scientific talent including whether creativity is associated with personality or artistic talent.

Tisdall, W. J. The Efficacy of a Special Class Program on the Productive Thinking Abilities of Educable Mentally Retarded Children. University Microfilms, Inc., 62-2981.

Todd, F. J., and others. "Differences between Normal and Under-achievers of Superior Ability." Journal of Applied Psychology 46: 183-90; June 1962.

Four hypotheses were stated, predicting that, as compared with normal achievers, underachievers would manifest less need for academic achievement, would be less likely to have decided on specific vocational goals, would be more likely to perceive a relationship between course-work and attainment of goals and would have lower expectancy for success in academic pursuits. Results from two personality inventories and a specially devised questionnaire provided some support for all four hypotheses for males, but not for females.

Tomas, V., editor. Creativity in the Arts. Englewood Cliffs; New Jersey: Prentice Hall, 1964

Torrance, E. P., editor. Creativity. Minneapolis: University of Minnesota, Center for Continuation Study of the General Extension Division, 1959a.

Addresses given at the Second Minnesota Conference on Gifted Children, as well as an account of the Minnesota Studies of Creative Thinking.

Torrance, E. P. "The Learning and Adjustment of the Highly Creative Child" Minneapolis: University of Minnesota, Bureau of Educational Research, October 15, 1959b.

Definition: We have defined creative thinking quite simply as the process of forming ideas of hypotheses, testing them, and communicating the results. Something new, something which one has never seen or which has never existed before.

Tests: Ask and Guess test (Torrance and Radig, 1959).

Responses: ideational fluency, spontaneous flexibility, inventive level, constructiveness. Ways of studying very creative children: comparison between highly creative and highly intelligent (IQ) comparisons of race, sex, class, also. School achievement of highly creative children. Goal of school: to aid the highly creative to be less obnoxious without sacrificing his creativity.

Torrance, E. P. "Recent Research Concerning Gifted Children." (pp. 64-72) in Thirteenth Yearbook of AACTE. Washington, D. C.: American Association of Colleges for Teacher Education, 1960.

Discussion of Minnesota Tests of Creativity and status review of art as of 1960.

Torrance, E. P. "Problems of Highly Creative Children." Gifted Child Quarterly 5: 31-34; 1961a. (Cf. Education Digest 27: 40-42; November 1961.) (Also [pp. 240-45] in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963.)

Discusses the following factors regarding highly creative children:

1. Sanctions against divergency.
2. Creative children may not be well rounded.
3. Creative children prefer to learn on their own.
4. Creative children like to attempt difficult tasks.
5. Creative children are searching for a purpose.
6. Creative children search for their uniqueness.
7. The psychological estrangement of creative children.

Three characteristics of creative children show (a) tendency for them to have reputation for having wild and silly ideas; (b) work characterized by its productivity of ideas off beaten track; (c) humor and playfulness.

Torrance, E. P. "Factors Affecting Creative Thinking in Children: An Interim Report." Merrill-Palmer Quarterly 7: 171-80; 1961b.

Discusses psychological factors affecting the creative thinking of young children.

Torrance, E. P. "Priming Creative Thinking in the Primary Grades." Elementary School Journal 62: 34-41; 1961c. Also (pp. 318-325) in Seidman, J. M., editor. Educating for Mental Health. New York: T. Y. Crowell Co., 1963.

A discussion of some specific ways of inducing fuller functioning of children's latent creativity.

Torrance, E. P., and Harmon, J. A. "Effects of Memory, Evaluative and Creative Reading Sets on Test Performance." Journal of Educational Psychology 52: 207-14; 1961d.

Experiment designed to test the various effects of memory, evaluation, and creative sets in various reading assignments for graduate students with 115 subjects. Each of the three sets were assigned to the three different groups in turns. Creative set achieved the highest mean each week, those operating in the memory set achieved the highest memory test during the third week.

Torrance, E. P., and Punsalan, Victoria. Creativity: A New Dimension of Intelligence. Washington, D. C.: National Education Association, (Association for Supervision and Curriculum Development), 1961e.

Describes creative children as possessing wider factors of intellect, and makes curriculum suggestions for their stimulation.

Torrance, E. P. "The Creatively Gifted are Cause for Concern. Gifted Child Quarterly 5: 79-88; Autumn 1961f.

Digest of first chapter in book Guiding Creative Talent discusses concerns of educationa over producing fully functioning creative adults.

Torrance, E. P. "Flying Monkeys and Silent Lions." Exceptional Children 28: 119-28; November 1961g.

A plea for less pressure for conformity on the divergent thinking of gifted children, and more help in developing their unique talents.

Torrance, E. P. "Factors Affecting Creative Thinking in Children: An Interim Research Report." Merrill-Palmer Quarterly 7: 171-80; 1961h.

A report on stress, grouping, social sanctions, teacher and parental evaluation, conformity pressures and other factors affecting the inhibiting of childrens creativity.

Torrance, E. P. "Can Grouping Control Social Stress in Creative Activities?" Elementary School Journal 62: 139-45; 1961i.

A discussion of the advantages of grouping in helping children handle social peer sanctions.

Torrance, E. P. "Stress: When Problems Threaten to Overwhelm the Child, What Can the Teacher Do?" NEA Journal 50: 8-11; December 1961j. Also (pp. 102-08) in Crow, L. D., and Alice, editors. Mental Hygiene for Teachers: A Book of Readings. New York: Macmillan Co., 1963. (Cf. Elementary School Journal 62: 139-45; 1961.)

Suggestions for teachers in preventing stress and increasing creativity potential.

Torrance, E. P., editor. New Educational Ideas: Third Minnesota Conference on Gifted Children. Minneapolis: University of Minnesota, Center for Continuation Study, 1961k.

Conference proceeding include addresses by Drews and Torrance.

Torrance, E. P. "Team Leadership through Creative Administration." Professional Growth for Administrators; April 1961L. (Cf. Professional Growth for Teachers; April 1961, and Professional Growth for Principals; April 1961.)

Brief statements illustrate cooperative group efforts for creativity.

Torrance, E. P. "Give the Devil his Dues...." Gifted Child Quarterly 5: 115-18; Winter 1961m. (Cf. Education Digest 27: 46-48; April 1962.)

Discusses the necessity for rewarding creative thinking in home and classroom and points out that we should (1) be respectful of unusual questions, and also ideas of gifted children; (2) show children their ideas have value; (3) provide opportunities for self-initiated learnings; and (4) provide for periods of non-evaluated practice for learning.

Torrance, E. P. Guiding Creative Talent. Englewood Cliffs, New Jersey: Prentice Hall, 1962a.

An original book on teaching and guidance of gifted children. Chapters 1 and 2 are devoted to an introduction to the subject, 3 and 4 to identification of creative children, 5 is a summary of the creative abilities. Chapter 6 describes problems encountered by creative individuals, and 7 tells about problems associated with the repression of creativity. Chapters 8 and 9 discuss guidance in dealing with creative children, and 10 deals with counselor training and administration.

Torrance, E. P. "Fostering Creative Thinking During the High School Years." High School Journal 45: 281-88; 1962b.

Describes ways in which teachers can foster creative thinking in adolescents. (Cf. article in Scientific Creativity.)

Torrance, E. P., and Myers, R. E. "Teaching Gifted Elementary Pupils Research Concepts and Skills." Gifted Child Quarterly 6: 1-5; Spring 1962c.

A discussion of concept-formation, and methods of teaching it to gifted children.

Torrance, E. P. "Measurement and Development of the Creative Thinking Abilities." (pp. 124-42) in Bereday, J., editor. The Year Book of Education, 1962: The Gifted Child. London: Evans Brothers, 1962d.

An overview of Torrance's work prepared for a rather unsophisticated audience.

Torrance, E. P., and Myers, R. E. Teaching Gifted Students How to do Research. Eugene, Oregon: Perceptive Publishing Co., 1962e.

Booklet of useful suggestions and practical suggestions on units in research at the upper elementary level for bright children.

Torrance, E. P. "Cultural Discontinuities and the Development of Originality of Thinking." Exceptional Children 29: 2-13; 1962f.

To assess originality of thinking, 1,000 pupils (Grades 1-6) were studied in the following areas: Australia, United States - Negro, Germany, India, Samoa, and United States. In our culture and elsewhere except Samoa the generalized development curve of creative thinking abilities contained discontinuities: drops in creativity, at beginning of kindergarden, end of 3rd or beginning 4th grades, in the 7th and a slight drop or leveling at the end of high school. These states seem to fit H. S. Sullivan's (1953) concept of states of development of inter-personal skills.

Torrance, E. P. "Testing and Creative Talent." Educational Leadership 20: 7-10ff; 1962g.

A defense of creativity tests and a catalog of differences between groups of students found high and low in them.

Torrance, E. P. "Must Creative Development be Left to Chance?" Gifted Child Quarterly 6: 41-44; Summer 1962h.

Argues that creative development never "just happens" and does not have to be left to chance. Better educational procedures and more understanding teachers can prevent drops in creativity through school which are now considered normal experience. Evidence adduced from investigations in Samoa link decline in creativity to the low value placed on adventurousness and curiosity and the high value placed on promptness and competitiveness. Associated with cultural discontinuities, however, is a rise in creativity.

Torrance, E. P. "Rewarding Creative Thinking." Educational Digest 27: 9: 46-48; 1962i.

Main Principles: (1) be respectful of ideas and questions, (2) show child his ideas have value, (3) provide opportunity for self-initiated learning and non-evaluative practice.

Torrance, E. P. "Creative Thinking of Children." Journal of Teacher Education 13: 448-60; December 1962j. (Cf. [pp. 407-28] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

A very well documented review of the development of children's creative thinking ability with suggestions for teachers and researchers.

Torrance, E. P. "Non-Test Ways of Identifying the Creativity Gifted." Gifted Child Quarterly 6: 71-75; 1962k.

Factors hindering revelation of creative abilities through tests are presented. The discrepancies between overt exploratory behavior of children in and out of school justifies a redefinition of creative behavior. Parent descriptions of creative children and a check list developed by teachers and counselors attending a creative thinking seminar provided the data from which tentative definitions were developed. Specific non-test devices itemized were play activities, school tests, curiosity behavior, reaction to crises, and student self-ratings on sensitivity to problems, flexibility, fluency originality, elaboration, and redefinition types of thinking.

Torrance, E. P. "Ten ways of Helping Young Children Gifted in Creative Writing and Speech." Gifted Child Quarterly 6: 121-27; Winter 1962L.

(1) Provide materials which develop imagination. (2) Provide materials which enrich imagery. (3) Permit time for thinking and day-dreaming. (4) Encourage children to record ideas. (5) Give children's writing some concrete comment. (6) Accept the child's natural tendency to take a different look. (7) Prize, don't punish, true individuality. (8) Be cautious about editing children's writings. (9) Encourage children to play with words. (10) Love them and let them know it.

Torrance, E. P. "Who is the Underachiever?" NEA Journal 51: 8: 15-17; November 1962m.

The author stresses the fact that "traditional concepts of underachievement and overachievement, based on a comparison of achievement with an I. Q. score or with a score on a test of scholastic aptitude no longer make sense; for example, 1st graders are labeled underachievers because of high I. Q. scores and 2nd graders overachievers because their lower I. Q." He feels that in determining over and underachievement, educators usually fail to account for the relationship between capacities and needs of the individual and the ability of the environment to provide outlets for them.

The reader is asked to contrast the author's picture of a 5th grade class of underachievement (with "scorned imagination," "unused memory," "forbidden daydreams," "unsought judgments") which comes to life in the 6th grade, under a much less authoritarian teacher.

Torrance, E. P. What Research Says to the Teacher. Washington, D. C.: American Educational Research Association, and National Educational Association, 1962n.

American Educational Research Association booklet discusses measurement of creativity, patterns of development, and hints for teacher behavior to enhance manifestation.

Torrance, E. P. "Developing Creative Thinking Through School Experiences." (pp. 31-47) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking, New York: Charles Scribner's Sons, 1962o.

Suggests principles to guide teachers in developing creative thinking through school experiences as: (1) value creative thinking; (2) make children sensitive to environmental stimuli; (3) encourage manipulation of objects and ideas; (4) teach how to test each idea systematically; (5) develop tolerance of new ideas; (6) beware of forcing a set pattern; (7) develop a creative classroom atmosphere; (8) teach the child to value his creative thinking; (9) teach skills for avoiding peer sanctions; (10) give information about the creative process; (11) dispel the sense of awe of masterpieces; (12) encourage self-initiated learning; (13) create sensitivity to defects; (14) create necessities for creative thinking; (15) provide for active and quiet periods; (16) make available resources for working out ideas; (17) encourage the habit of working out the full implication of ideas; (18) develop constructive criticism; (19) encourage acquisition of knowledge in a wide variety of fields; (20) develop adventurous-spirited teachers.

Torrance, E. P. "Factors Affecting Creative Thinking in Children: An Interim Research Report." Readings in Educational Psychology. (Edited by W. C. Morse and G. M. Wingo.) Chicago: Scott, Foresman, 1962p. (Cf. "Fostering Creative Thinking During High School Years." High School Journal 45: 281-88; 1962.)

Exposition of Torrance's views on development of creativity in school children.

Torrance, E. P. "Changing Reactions of Preadolescent Girls to Tasks Requiring Creative Scientific Thinking." Journal of Genetic Psychology 102: 217-23; 1963a. (Cf. Proceeding of Minnesota Academy of Science 30: 83-88; 1963.)

1958-59 experiments by author and associates showed: (1) In early school years girls were developing attitudes, interests and disabilities which would make it difficult for them to become scientific discoverers; (2) It was felt, also, that these tendencies were so strong as to suggest that attitudes of girls in today's elementary schools might make difficult adjustments in our culture. A small group task requiring creative scientific thinking was administered in the 4th, 5th and 6th grades of a university elementary school, both in 1959-60. Results show: (a) In 1959, boys demonstrated and explained significantly more principles than did girls. (b) In 1960, the performance by girls equaled that of boys. (c) The contributions of girls, however, reported as much enjoyment of the task as did boys.

The author takes the position that there is misplaced emphasis on overemphasis on sex roles in early school years which interferes with the development of creative thinking abilities.

Torrance, E. P. "Helping Gifted Children Read Creatively." Gifted Child Quarterly 7: 3-8; Spring 1963b.

Good discussion of creative reading problems with examples and a considerable bibliography.

Torrance, E. P. "Are There Tops in Our Cages?" American Vocational Journal 38: 20-22; March 1963c.

Creative children need to be able to get out of stereotyped interest patterns to express themselves.

Torrance, E. P. "Conditions for Creative Learning." Childhood Education 8: 367-70; April 1963d.

Teachers can reward creative achievement, provide for continuity of creative development and establish creative relationships with children.

Torrance, E. P. "What Kind of a Person Do You Want Your Gifted Child to Become?" Gifted Child Quarterly 7: 87-91; 1963e.

Analysis of the ten most and ten least desirable characteristics of lists submitted by 294 parents. Creative gifted studies (50) were used to obtain these characteristics. Discussion is in terms of the significance of each characteristic for the development of creative potential.

Most: (1) considerate of others; (2) healthy; (3) sense of humor; (4) sincere; (5) self-confident; (6) determination; (7) independent in thinking; (8) courteous; (9) self-starter; and (10) industrious.

LEAST: 53) Emotional 54 and 55 Bashful, Timid 56) Critical of others 57) Stubborn 58) Negativistic 59) Fault-finding 60) Domineering 61) Disturbs class organization 62) Haughty and self-satisfied.

Torrance, E. P. "Toward the More Humane Education of Gifted Children." Gifted Child Quarterly 7: 135-45; 1963f. (Cf. Teacher Education [Illinois State University] 26: 14-26; 1964.)

A summary of Torrance's beliefs regarding gifted children, and a rebuttal to various persons who have misquoted him, or attacked him by half-truths. Areas covered include creative learning and learning by authority; intelligence tests and creativity tests; moral courage and social adjustment, accumulation of knowledge and creativity; original answers and correct answers; divergent and convergent behavior; responsive and stimulating environments; treatment of boys and girls; and chaos and discipline.

Torrance, E. P. "Essay Review: Creativity and Intelligence." School Review 71: 112-15; Summer 1963g.

A thoughtful review of Getzels and Jackson's study which aires many issues about creativity.

Torrance, E. P. "Explorations in Creative Thinking in the Early School Years." In Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, 1963h. (Cf. What Research Says to the Teacher: Creativity. Washington, D. C.: National Education Association, 1963; "The Gifted Child." The Encyclopedia of Mental Health. New York: Franklin Watss, 1963.)

Short and semi-popular exposition of creativity.

Torrance, E. P., and Gowan, J. C. The Reliability of the Minnesota Tests of Creative Thinking. Minneapolis: University of Minnesota, Bureau of Educational Research, August 1963i.

Gives reports of split-half and stability reliability statistics from field works, finding that they are generally from .7 to .8, high enough for continued group experimentation.

Torrance, E. P. "The Creative Personality and the Ideal Pupil." Teachers College Record 65: 220-26; December 1963j.

Results from the Ideal Pupil check list of 63 behaviors which characterize the creative show that teachers reward some and punish others.

Torrance, E. P. "Creative Thinking Through the Language Arts." (pp. 436-41) in Crow, L. D., and Alice, editors. Readings in Human Learning. New York: David McKay Co., Inc., 1963k.

Discusses ways in which the language arts curriculum can be used to stimulate creative thinking.

Torrance, E. P. "Explorations in Creative Thinking in the Early School Years: A Progress Report." (pp. 173-83) in Taylor, C. W., and Barron, F., editors. Scientific Creativity: Its Recognition and Development. New York: John Wiley & Sons, Inc., 1963L.

Status report as of 1959 discusses Getzels and Jackson's experiment, Minnesota Tests of Creativity, and dip in creativity, attempts to increase creative thinking, peer attitudes and Torrance's replication of the high-creative, high-intelligent experiment.

Torrance, E. P. Education and the Creative Potential. Minneapolis: University of Minnesota Press, 1963m.

This book contains summaries of research and theories on creativity and their relationships to school and family practice. The author feels that creative performance is heavily dependent upon home and school conditions.

Descriptions are included of three non-verbal tests of creativity: (1) the Picture Construction Test, (2) the Incomplete Figures Test, and (3) the Circle Test. Case studies of creative children and what can happen to them in the classroom are included.

Research findings are presented on the effects of homogeneous grouping, reducing social stress and increasing ideational fluency. There is a comparison of many cultures and a report of influences of stresses of cultural discontinuities on declines in creative thinking abilities at ages 5, 9, 13, and 17.

Torrance, E. P. "Adventuring in Creativity." Childhood Education 40: 79-87; 1963n.

Popular presentation of research on creativity in early years.

Torrance, E. P., and Arsan, K. "Experimental Studies of Homogeneous and Heterogeneous Groups for Creative Scientific Tasks." (pp. 133-40) in Charters, W. W., and Gage, N. L., editors. Readings in the Social Psychology of Education. Boston: Allyn Bacon, 1963o.

Torrance, E. P., and Gupta, R. "Programmed Experiences in Creative Thinking." Minneapolis: University of Minnesota, Bureau of Educational Research, 1964a. (Mimeo.)

Torrance, E. P. "No Time for Talent: Why the Creative Student is Out of Step in School." National Observer 3: 20; January 13, 1964b.
Popular presentation of subject.

Torrance, E. P. "Summer: A Time for Self-Initiated Learnings." Gifted Child Quarterly 8: 59-63; 1964c.

Lists some self-initiated learnings for children in summer vacation including those involving exploring, improving, tinkering, collecting, training pets, heightening awareness, inventing, planning activities, and other creative play activities.

Torrance, E. P. "Realistic Recreation of Models of Creatively Gifted Persons." Gifted Child Quarterly 8: 111-14; Autumn 1964d.

A study on the motivational effect of dramatized records on the lives of creatively gifted persons seemed to indicate that the identification that creatively gifted children find these models is a powerful motivating tool.

Torrance, E. P. "Education and Creativity." (pp. 49-128) in Creativity: Progress And Potential. (Edited by C. W. Taylor.) New York: McGraw-Hill Book Co., 1964e.

A long and well-documented essay on the educational aspects of creativity. Begins with a historical and status review, passes to the Minnesota Tests, and ends with a detailed account of children's problems and suggestions for teachers in the elementary, high school and college levels.

Torrance, E. P. "Individualizing Differences in Creativity." (pp. 15-20) in Individualizing Education. (Edited by Margaret Rasmussen.) Washington, D. C.: Association for Childhood Education International, 1964f.

Short piece on what teachers can do to help creativity in children.

Torrance, E. P. Implications of Creativity Research Findings for Instructional Media. Minneapolis: University of Minnesota, College of Education, 1964g.

Paper covers the following areas:

1. Implications of Discontinuities in Creative Development.
2. Changing Ways of Storing Information.
3. Materials That Permit One Thing to Lead to Another.
4. Materials That Inform About the Creative Process.
5. Materials for Teaching Research Concepts and Skills.
6. Honesty and Realism in Presenting Lives of Creative People.
7. Knowledge Presented as Incomplete.
8. Materials to Encourage Creative Characteristics .
9. Correcting Misplaced Emphases on Sex Differences.
10. Encouraging Elaborations as well as Originality.
11. Different Materials for Different Kinds of Learners.
12. Textbook Flexibility and Supplementary Materials.
13. Measures for Assessing Creative Achievement.
14. Measures for Use in In-Service Education.
15. Lessons from History.

Torrance, E. P. "The Minnesota Studies of Creative Thinking: 1959-62." (pp. 125-44) in Taylor, C. W., editor. Widening Horizons in Creativity. John Wiley & Sons, Inc., 1964h.

Gives details of development of Minnesota Tests of Creative Thinking.

Torrance, E. P. "What Kinds of Persons Do We Want Gifted Children to Become?" High School Journal 48: 88-94; November 1964i.

Use of Ideal Pupil Check List with high school teachers discloses their hostility to creativity.

Torrance, E. P., and others. Role of Evaluation in Creative Thinking. Minneapolis: University of Minnesota, College of Education, Bureau of Educational Research, Cooperative Research Project No. 725, 1964j.

Extensive 400-page book of 25 chapters such as: "Inservice Education for Rewarding Creative Behavior"; "Creative Motivations of Teachers and Creative Growth of Pupils"; "The Environment Which Rewards Creativity"; "Differential Rewards for Boys and Girls"; "Unevaluated Practice and Creative Behavior"; "Helping Children Value Their Ideas"; etc.

Toynbee, A. "Is America Neglecting Her Creative Minority?" (pp. 3-9) in Taylor, C. W., editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

Yes. Chiefly through misconceptions of democracy as equalitarianism in which the bright child is considered to have committed a prenatal offense against equality.

Tracy, Ellen K. "A Survey of the Characteristics of the Intellectually Gifted Child and the Educational Facilities for the Gifted Student in Several Carefully Selected Secondary Schools on Long Island." Unpublished Ed.D. thesis, New York: Fordham University, 1963. Dissertation Abstracts 24: 635; 1964.

A survey of characteristics of gifted children and programs for them.

Trembly, D. Age and Sex Differences in Creative Thinking Potential. San Luis Obispo: California State Polytechnic College, 1964. Paper presented at American Psychological Association Annual Convention, 1964, Division 5, Los Angeles, California.

Creative thinking potential is a natural characteristic. Females at all ages score higher than males. Does not reach a peak till mid-twenties.

Trembly, D. Age Curve Differences Between Natural and Acquired Intellectual Characteristics. San Luis Obispo: California State Polytechnic College, 1964. Paper presented at American Psychological Association Annual Convention, 1964, Division 20, Los Angeles, California.

Found that age curve for acquired intellectual characteristics never reaches a plateau, nor declines. However, age curve for natural intellectual characteristics does. Thus, two distinct types of age curves; one for aptitude, the other for knowledge. Age of maturity and decline varies for different aptitudes. It was suggested that aptitudes appearing early may be the latest to decay.

Triandis, H. C., and others. "Team Creativity as a Function of the Creativity of the Members." Journal of Applied Psychology 47: 104-10; 1963.

The relationship between team performance and individual abilities was studied with creative tasks. Data from 3 experiments are presented which indicate that the conclusions of other investigators, who used manual dexterity and cognitive tasks, can be applied to creative tasks. Up to about 70% of the variance in dyadic creativity may be predicted from the individual creative abilities of the 2 members. In 1 experiment, in which the procedure permitted the determination of the relative "dominance" of the 2 subjects the correlations of the abilities of the dominant subjects with group performance were higher than the correlations of the abilities of nondominant subjects with group performance. The study is a 1st step towards the determination of the relationship of group and individual performance in groups composed of more than 2 individuals.

True, G. H. "Creativity as a Function of Idea Fluency, Practicability, and Specific Training." Dissertation Abstracts 17: 401-02; 1957.
Early approach to creativity analysis.

Tumin, M. "Obstacles to Creativity." (pp. 105-13) in Parnes, S. J., and Harding, H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.

A discussion of creative man in his battle with conformist society. "Only skillful handling makes it possible to direct the unique strivings of man into channels which are socially accepted rather than into channels which get the individual into real trouble with society.

Twitchell, T. G. Programs Initiated by Institutions of Higher Learning for Gifted High School Students of California. Unpublished doctoral thesis, University of Southern California, 1964.

Uraneck, W. O. Creative Thinking Workbook. Massachusetts: 56 Turmag Road, Lexington 73, 1963.

U. S. Department of Health, Education, and Welfare, Office of Education. New Dimensions in Higher Education. No. 8: 2-11; 1961. Washington, D. C.: Office of Education. (Cf. [pp. 302-10] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

A review of the Advanced Placement Program.

U. S. Department of Health, Education, and Welfare, Office of Education. "Does Grouping Make a Difference in Pupil Learning?" By Jane Franseth in Toward Effective Grouping. Bulletin No. 5-A, 1962. Washington, D. C.: Office of Education.

Found that children grouped according to ability seem no more likely to make greater achievement gains than their counterparts in heterogeneously grouped classes. Indicated the difficulties in attempting to divide children according to ability.

Vafeas, W. P. The Effect of Barriers on the Creative Development and Aesthetic Quality of Three-Dimensional Art Forms. Unpublished doctoral thesis, University Park: Pennsylvania State University, 1961.

Vance, E. P. Program Provisions for the Mathematically Gifted Student in the Secondary School. Washington, D. C.: National Council of Teachers of Mathematics, 1958.

Reports on programs in a variety of schools. Gives recommendations of committees and commissions.

Vane, Julia R. The Relation of Early School Achievement to High School Achievement when Race, Intelligence, and Socio-Economic Factors are Held Constant. Hempstead, New York: Hofstra College, 1964.

Results showed that correlations between all achievement scores were high and positive. Fairly high correlation between IQ and achievement; achievement and socioeconomic status (measured by father's occupational level). Achievement and IQ were independent of race. Strong correlation was found between achievement and socioeconomic level.

Van Zeist, R. H., and Kerr, W. A. "Some Correlates of Technical and Scientific Productivity." Journal of Abnormal Social Psychology 46: 470-75; 1951.

Productive scientists were characterized by more degrees, higher rank, more professional memberships and journals read. When age was held constant, degrees held, disbelief in equalitarian practices in research groups and belief in self-determination in deadlines was noted. (Cf. also *ibid.*, 47: 129; 1952, where a further note suggests that high scientific attainment combines [a] creativity, [b] opportunity, and [c] industriousness.)

Veatch, Jeannette. "The Structure of Creativity." Journal of Educational Sociology 27: 102-07; 1953.

A study of 300 elementary children whose teachers fostered a creative classroom climate.

Vening, G. H., and Polder, E. J. "A Bibliography on Creativity." Columbus, Ohio: Ohio State University, Bureau of Educational Research, 1954. (Mimeo.)

Early bibliographic effort.

Von Fange, E. K. Professional Creativity. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1959.

Creative engineer at General Electric describes creativity in the sciences and engineering. In addition to dealing with the steps in the creative process, he also describes personal and social relationships in dealing with resistance to change.

Vredevoe, L. E. "Grouping of Secondary School Pupils." California Journal of Secondary Education 30: 33-37; January 1955.

Presents results of a survey to see what type of grouping is being used and which type is favored in secondary schools. Presents conclusions that have resulted from the research that is typical of most plans. A bibliography is included.

Waggoner, G. R. "The Development of Programs for Superior Students in Large Universities." Educational Record 40: 319-25; October 1959.

A discussion of the considerations leading to new university programs for the gifted, and the principal pattern of such programs.

Walker, H. E. "Relationships between Predicted School Behavior and Measures of Creative Potential." Unpublished Ed.D. thesis, Ann Arbor: University of Michigan, 1963. Disseration Abstracts 24: 636; 1964.

Factor analytic study gave the following results: (a) grades of high creativity (HC) boys more variable, (b) grades of HC bear closer relation to interests, (c) HC boys not as likely to try for college and HC girls more likely to drop out, (d) HC students do better in college than high school, (e) HC students respond better to internal standards.

Walker, W. J. Creativity and High School Climate. Unpublished doctoral thesis, Syracuse, New York: Syracuse University, 1964.

Wallace, H. R. "Creative Thinking: A Factor in Sales Productivity." Vocational Guidance Quarterly 9: 223-26; Summer 1961.

Two tests of the University of Minnesota were used under the direction of Professor Paul E. Torrance: (1) Test of Curiosity, where subjects listed questions and hypotheses concerning the causes and consequences of actions shown in a picture; (2) Test of Imagination, where were asked for clever, interesting and unusual solutions to "brainstorming problems."

It was found that creative thinking ability is significantly related to sales productivity of department store sales people. It was shown, also, that sales people in departments which provide a large amount of customer service are significantly more creative than those in departments where the customers require relatively little help in making their purchases.

Wallach, M. A., and others. "Relationship of Family Disturbance to Cognitive Difficulties in a Learning Problem Child." Journal of Consulting Psychology 24: 255-60; August 1960.

Traces a causal linkage between disturbance in parent-child interaction, and the child's cognitive impairment, that is (1) his sensitivity to the possibility of danger in school activities, (2) cognitive avoidance of school related matters, and (3) avoidance of the concept of equivalence in particular. These disturbances are traced either to fear of school achievement or avoidance of knowledge of crucial family relationships.

Wallach, M. A., and Kogan, N. "A New Look at the Creativity-Intelligence Distinction." Durham, North Carolina: Duke University, Department of Psychology, Cooperative Research Project No. 1316B, 1964. (Mimeo.)

Finds creative children have moderate not low anxiety. Dichtomizing by high and low creativity and intelligence they find 4 groups:

HCHI: can exercise both control and freedom.

HCLI: under stress in angry conflict, in stress free context, can blossom cognitively.

LCHI: "addicted" to school achievement.

LCLI: basically bewildered by school.

"Creativity is a mode of cognitive functioning which matters a great deal in the life of the child."

Wallen, N. E. "Creativity--Fantasy and Fact." Elementary School Journal 44: 438-43; May 1964. (Cf. Education Digest 30: 1: 18-20, September 1964.)

Decries tendency to overgeneralize findings, to imply that creativity and intelligence are different, and to forget lack of validity and reliability of present creativity tests.

Wallis, R. R. The Learning of Semi-Concrete and Abstract Materials by Bright and Retarded Students. Unpublished doctoral thesis, Norman: University of Oklahoma, 1964. Dissertation Abstracts 24:1081;1964.

Walter, S. The Prediction of High School Academic Success--A Longitudinal Study. Unpublished Ed.D. thesis, Los Angeles: University of Southern California, 1964.

Analyses of 76 predictor variables were used to determine a pattern or academic success. This was found to be mainly personal and not easily modifiable.

Ward, V. S. "Educating Your Most Educable." American School Board Journal 140: 26-27; February 1960a.

A sequence of inquiries through which school men and the lay public may initially explore the substance of the local school's provisions for the gifted. Can serve as an informal check list to encourage balanced provisions where a school staff is making progress.

Ward, V. S. "The Role and Nature of Theory in the Education of the Gifted." Educational Theory 10: 210-16; July 1960b.

There is a dichotomy between the empirical and rational in the field of special education for the gifted. The greatest theoretical gaps appear in educational programming and curriculum development.

Ward, V. S. "Systematic Intensification and Extensification of the School Curriculum." Exceptional Children 27: 67-71, 77; October 1960c.

Author maintains that an adequate theory of differential education has not been developed. Discussion includes:

1. Elements from which a theory can be built.
2. General nature of a theory.
3. Attempts at the application of a theory.

Ward, V. S. Educating the Gifted: An Axiomatic Approach. Columbus, Ohio: Charles E. Merrill Books, Inc., 1961.

Emphasizes the major innovations and educational principles which have proved effective with gifted children. Table of Contents includes:

- I. The Superior Student in an Educational Perspective.
- II. General Principles of the Educational Design.
- III. Principles of Intellectual and Academic Development.
- IV. Principles of Personal, Social and Character Development.

Ward, V. S. "The Role of Intelligence in Experience." Gifted Child Quarterly 6: 15-18; Spring 1962a.

Discussion of concept formation, and the way curriculum may be altered to promote better learning by the able.

Ward, V. S. "The Function of Theory in Programs for the Gifted." Teachers College Record 62: 532-39; April 1962b.

States the nature of theory for intellectually gifted students. Explains how theory will help practice that meets with the objectives of education for extraordinary youth. Proper educational objectives for gifted children should be geared toward roles of responsibility and leadership. Explains the nature of deficiencies in present movement for education.

Ward, V. S. (Director, Southern Regional Project for Education of the Gifted.) The Gifted Student: A Manual for Program Improvement. Atlanta: Southern Regional Education Board, 1962c. (Cf. [pp. 171-77] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

Gives ten cardinal principles for program improvement.

Ward, V. S. The Governor's School of North Carolina: A Case Study in Curricular Designing for Gifted Secondary School Students. Unpublished paper presented at the 42nd Annual Convention of the Council for Exceptional Children, Chicago, Illinois, 1964a.

Discusses an eight weeks residential summer program for gifted secondary school students selected from public and private schools across the state. Curriculum is exploratory and experimental, ranging across the spectrum of both academic disciplines and the fine and performing arts. Areas: Aptitude Development, General Intellectual Development, Self-Insight and Personal Development.

Ward, V. S. "Theoretical Foundations for Curricular Modification." High School Journal 48: 120-27; November 1964b.

Discusses (1) the function of theory, (2) the elements of design, and (3) the social significance of curriculum adaptations for the able.

Warren, J. R., and Heist, P. A. "Personality Attributes of Gifted College Students." Science 132: 330-37; 1960. (Cf. [pp. 114-23] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

An appraisal of some major behavioral characteristics as measured by objective personality inventories of 918 college freshmen, male and female, of exceptional mental ability. The results, in addition to confirming previous research findings, indicated the gifted as having a strong disposition toward intellectual activity reacting to artistic rather than utilitarian parts of environment.

Warren, M. H. "Speeding up the Bright One." Atlantic Monthly 209: 66-69; June 1962.

Account by St. Paul's Schoolrector of the Summer School Program put on by this private school for New Hampshire bright youth as developed by Hugny.

Wayne, M. C. A Study of the Provisions Established for Students of Superior Academic Ability in Six Selected High Schools in New Jersey. University Microfilms, Inc. , 63-773.

Wechsler, L. K. "The High School of Music and Art, New York City." Gifted Child Quarterly 5: 67-68; Summer 1961.

Brief description of activities for talented children in this special New York school.

Weinstock, I. An Inquiry into Certain Human Determinants of Organizational Creativity. University Microfilms, Inc., 63-2794.

Weir, E. C. "Choice and Creativity in Teaching and Learning." (pp. 290-95) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963. (Cf. Phi Delta Kappan, June 1962.)

Avers that since children respond primarily to the environment they create for themselves, teachers should offer them power to make more effective choices.

Weisberg, P. S., and Springer, K. "Environmental Factors in Creative Function." Archives in General Psychiatry 5: 554-64; 1961.

Comparing high creative 4th graders with low found the higher rated higher on (1) strength of self-image, (2) ease of early recall, (3) availability of Oedipal anxiety, (4) uneven ego development. On the Rorschach they appeared more sensitive and independent than their peers.

Weiser, J. C. "A Study of College and Education Students Divided According to Creative Ability." Unpublished Ed.D. thesis, Columbia: University of Missouri, 1962. Dissertation Abstracts 23: 4611; 1963. University Microfilms, Inc., 63-1545.

With N=282 education students, the following results emerged:

1. Eight-nine of 300 adjectives were significantly related to creativity.
2. No dignificant correlation between creativity and MTAI or creativity and SCAT or creativity and GPA.
3. Self-ratings of students as creative agree with creative performance.
4. Potentially creative teachers display many personality characteristics found in creative people in other fields, but not many found undesirable in teachers.

Weisskopf-Joelson, E. A., and Eliseo, T. S. "An Experimental Study of the Effectiveness of Brainstorming." Journal of Applied Psychology 45: 45-49; 1961.

Found to be highly effective especially when criticism is suspended.

Welch, L. "Ideational Reorganization of Ideas in Creative and Non-Creative Thinking." Annals of New York Academy of Sciences 91: 141-49; 1960.

A discussion of the importance of being able to restructure and reorganize in the thinking process.

Wells, D. W. "A Modified Curriculum for Capable Students." Mathematics Teacher 51: 181-83; March 1958.

This plan consolidates the traditional four-year high school mathematics curriculum into three years, and topics from analytic geometry, calculus and college algebra are offered in the fourth year.

Westcott, M. R. "On the Measurement of Intuitive Leaps." Psychological Report 9: 276-74; 1961.

Tendency to demand little or much information is stable with a subject, but varies among subjects and is unrelated to the tendency to reach correct solutions.

Westcott, M. R., and Ranzoni, Jane H. "Correlates of Intuitive Thinking." Psychological Report 12: 595-613; 1963.

Five kinds of data were gathered on various groups of college students (females) who differ in their approach to and success in problem-solving. Detailed study revealed differences between the groups.

Westcott, M. R. "Empirical Studies of Intuition." (pp. 34-53) in Taylor, C. W. editor. Widening Horizons in Creativity. New York: John Wiley & Sons, Inc., 1964.

Reports three kinds of studies: (1) unconscious concept formation, (2) autonomic changes which presage cognitive changes, and (3) the tendency to leap early or late in problem-solving.

Whiting, C. S. Creative Thinking. New York: Reingold Publishing Corporation, 1958.

Whittemore, R. G., Jr. Modification of Originality Responses in Academically Talented Male University Freshmen. Unpublished doctoral thesis, Tempe: Arizona State University, 1963.

Wiener, Jean, and O'Shea, Harriet. "Attitudes of University Faculty, Administrators, Teachers, Supervisors, and University Students Toward the Gifted." Exceptional Children 30: 163-66; December 1963.

A considerable variety of attitudes was found. In general, favorable attitude increased with education. University faculty and students were low on the list.

Wild, M. K. "Creative Writing and Achievement in Solving Developmental Tasks in the Elementary School." Dissertation Abstracts 17: 2888-89; 1957.

Creative writing is seen as helpful in solving developmental tasks.

Wilhelms, F. T., and Westby-Gibson, Dorothy. "Grouping: Research Offers Leads." Educational Leadership 18: 410-13; April 1961.

Points out that grouping on one variable does not reduce heterogeneity on others. Generally negative as to value. (Introduction to a symposium.)

Wilkinson, P. H. "The High Tide for the Gifted." High School Journal 46: 2-13; October 1962.

A generally negative view of the issues involved in the education of the gifted, about ten of which are singled out for discussion. (Part of a symposium.)

Williams, C. W. "Acceleration: Some Considerations." (pp. 89-94) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963. (Cf. Educational Leadership 17: 351-55; March 1961.)

Discusses needs for acceleration, ungraded elementary schools, acceleration by subject, advanced placement programs, etc.

Williams, F. E. "Classification of Creative Activities and Experiences into the Primary Mental Abilities of Human Intellect." Sacramento, California: California State Department of Education, Bureau of Secondary Education, August 1962. (Mimeo.) (Cf. Plowman and Rice, 1964.)

An outline with examples of what each kind of cognitive ability means in terms of pupil activity (e. g., cognitive ability means activities that generate curiosity, cause awareness, require comprehension, etc.). Useful for teachers planning units for gifted children.

Williams, F. E. "The Search for the Creative Teacher." California Teachers Association Journal 60: 1: 14-16; January 1964.

A plea for more education of teachers in creative roles. Article has an excellent taxonomy of Guilford's operations factors, especially divergent thinking.

Willy, P. "The Gifted and the Creative Pupil." Education 82: 451-59; April 1962.

A general discussion of the difference between the creative and the gifted child.

Wilson, F. T. "The Motivation of the Gifted and Teacher Education." (pp. 276-82) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963. (Cf. Journal of Teacher Education 12: 179-84; June 1961.)

Thoughtful article on how teacher education can be altered to prepare teachers better able to deal with the able,

Wilson, M. "Screening Instruments for School Entry and Flexible Age Requirements." Bakersfield, California: Kern County Schools, 1961. (Mimeo.)

Booklet of 36 pages has several chapters including report by California Association of School Psychologists Research Committee, discussion of screening instruments, and discussion of flexible age requirements; with 31 references.

Wilson, R., chairman. The Curriculum of Secondary Schools Offering Advanced Studies. London: University of London Press, 1962.

Report of a committee of British university and secondary school personnel discusses what in America would be called a curriculum for the academically talented.

Wilson, R. C. "An Operational Definition of Originality." American Psychologist 6: 297; 1951.

Originality (suggested as the most essential element in creativity) is defined in terms of infrequency of response. A given test may be scaled for infrequent response.

Wilson, R. C. A Factor-Analytic Study of Creative Thinking. Unpublished doctoral thesis, University of Southern California, 1953a.

Done under Guilford this early factor analysis of creative thinking led to structure-of-intellect interpretations.

Wilson, R. C., and others. "The Measurement of Individual Differences in Originality." Psychological Bulletin 50: 363-70; 1953b. (Cf. [pp. 239-48] in Parnes, S. J., and Harding H. F. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962.)

An early paper on the dimensions of originality measurement.

Wilson, R. C. "Developing Creativity in Children." (pp. 257-62) in Crow, L. D., and Alice, Educating the Academically Able: A Book of Readings. New York: David McKay Co., Inc., 1963. (Cf. Education; September 1960.)

Thoughtful article discusses brainstorming, problem sensitivity, ideational fluency and originality.

Wilt, Miriam E. Creativity in the Elementary School. New York: Appleton-Century-Crofts, Inc., 1959.

Creative endeavor in the elementary age group is accomplished by readiness, activities, media, self-evaluation and adult acceptance. Emphasis on assisting children to create with words, bodies and hands.

Winborn, B., and Schmidt, L. G. "The Effectiveness of Short-Term Group Counseling upon the Academic Achievement of Potentially Superior but Underachieving College Freshmen." Journal of Educational Research 55: 169-73; December-January 1962.

The study was made on 135 freshmen in the academic year, 1958-59 at Indiana University. Findings were, (1) that the students who did not participate in a short-term group counseling program made significantly higher grade point averages than did the participants in the program, indicating that short-term group counseling can produce a negative effect on the academic achievement of potentially superior freshmen; (2) the superior, but underachieving student, could not be identified as such on the basis of information available to university officials prior to receipt of first semester grades.

Winefordner, D. "Verification of Possible Intellectual Giftedness by Use of Individual Intelligence Tests." In Pathways to Progress. Columbus, Ohio: Department of Education, Division of Special Education, 1963.
Discussion of the use of individual testing to assess ability.

Wirick, M. E., and Chambers, N. "Evaluating Achievement of Gifted Elementary School Children." Gifted Child Quarterly 8: 21-31; Spring 1964.

An attempt to measure the effectiveness of special classes for the gifted by using increases in achievement scores failed because of the low ceiling of the tests.

Wiszowaty, K. W. "A Special Science Program for Gifted Elementary School Children." Gifted Child Quarterly 5: 121-23; Winter 1961.

Description of a science program at Chicago, Illinois which involves guidance towards a science orientation in a manner similar to that of Brandwein.

Witty, P. A. "A Balanced Reading Program for the Gifted." Reading Teacher 1: 418-24; May 1963.

A rather popular curriculum discussion which introduces a symposium on reading for the able,

Wodtke, K. H. "Some Data on the Reliability and Validity of Creativity Tests at the Elementary School Level." Educational and Psychological Measurement 14: 399; 408; Summer 1964a.

A rather thorough and generally negative report on the reliability of the Torrance Tests at the elementary level, especially of part scores. The NV battery total r in grade 5 was .64 and other r 's were lower. V battery total was .73 in grade 5 with fluency subscore at .79. The correlation between the Torrance Tests and the Lorge-Thorndike IQ was .32 NV and .49 V at grade 5. Subjects were unselected elementary school children.

Wodtke, K. H., and Wallen, N. E. "The Effects of Teacher Controlling Behavior in Classroom on Pupil's Creativity Test Gains." University Park: Pennsylvania State University, 1964b. (Mimeo.) (American Educational Research Association, in press.)

Pupils of higher-controlling teachers in grade 4 made lower scores on verbal flexibility, verbal fluency, and total verbal creativity than did pupils of lower-controlling teachers.

Wolfe, D. "Diversity of Talent." The American Psychology 15: 535-45; August 1960. (Cf. [pp. 23-35] in French, J. L. Educating the Gifted, A Book of Readings. New York: Holt, Rinehart & Winston, Inc., 1964.)

In order to make full use of our intellectual resources we should (1) employ all means to encourage the development of talent, (2) learn more about the social factors which can effect this, and (3) maximize the diversity of talent, within individuals, occupations and society as a whole.

Wollen, R. F. "A Comparative Follow-up Study of Selected Superior Students in College." Unpublished Ph.D. thesis, Madison: University of Wisconsin, 1963. Dissertation Abstracts 24: 1485; 1964.

Students who had received guidance showed less concern in college and appeared more satisfied and more competent in their college experience than did a control group.

Wonderly, D. M. "A Study of Creative Females." Gifted Child Quarterly 8: 38-39; Spring 1964.

Girls appear more creative on Minnesota Tests of creative ability than do boys.

Woods, Margaret. "Learning Through Creative Dramatics." Educational Leadership 18: 19-23; October 1960.

A discussion with anecdotes of elementary dramatics as a creative tool. (Part of a symposium.)

Woolcock, C. W. "Mental Health Aspects of the Gifted and Talented." Bulletin of the National Association of Secondary-School Principals 45: 62-68; November 1961.

Outmoded ideas hindering progress are: (1) antidemocratic concept, (2) special programs means academic snobbery, (3) parents don't want such programs, (4) nothing but enrichment in heterogeneous class should take place.

Present needs are (a) earlier identification, (2) better diagnosis, (3) honest prognosis, (4) cooperation between parents and schools.

Woolcock, C. W. The Hunter College High School Program for Gifted Students. New York: Vantage Press, 1962.

The principal of Hunter College High School for girls (above 130 I.Q.) tells about the school in 10 chapters. These include philosophy, identification (with instruments), special curriculum, teacher education, guidance and special services, faculty, achievement at the school, the conclusion. There is much contributory material such as only an operating principal could provide which would be very valuable for others embarking on such a venture. The book is a useful contribution to literature.

Woolcock, C. W. "Guiding the Reading of Superior Students in a Special High School." Reading Teacher 16: 448-51; May 1963a.

Questionnaire explored reading habits of 85 gifted girls at Hunter College High School.

Woolcock, C. W. "Cautions about Educating Gifted and Talented Students." Bulletin of the National Association of Secondary-School Principals 47: 287: 8-13; December 1963b.

In general article, author decries (a) tendency to accelerate all gifted students, (b) to overextend advanced placement, (c) to teach mainly by testing, (d) to think grouping is useless, (e) to neglect creativity.

Worrel, J. "Problems of the Talented Child in Music." Gifted Child Quarterly 6: 9-30; Spring 1963.

Introduces symposium on music for the gifted, with following articles on creative musical talent, public school provisions, and other aspects.

Wyspianski, J. O. EEG Brain Waves and Creative Thinking. Unpublished doctoral thesis, Ontario: Ottawa University, 1963.

Yager, R. E., and Dessel, N. F. "Selection Criteria for High Ability Science Students." Journal of Educational Research 57: 193-96; December 1963.

A regression study found GPA, semesters of HS math, ACT math, ACT science, ITED quantitative reasoning to be significant factors in science selection.

Yamamoto, K. "Development of Ability to Ask Questions Under Specific Testing Conditions." Journal of Genetic Psychology 101: 83-90; 1962.

Questions asked (1st thru 12th grades) on Pt. I. of Ask-Guess-Test showed: (a) number of questions asked tends to increase with grade but are sharp dips in 4th and 7th grades; (b) largest single category is "why" in all groups, is 70% in 1-3 grades with sharp drop between 3rd and 4th grades; "what" questions show a jump at same stage and "be" questions continue a more or less steady rise; (c) chart with developmental features found in spontaneous questions of children also observed in questions asked under testing situation where are "asked to ask."

Yamamoto, K. "Creative Thinking and Teacher Effectiveness: A Review." Gifted Child Quarterly 7: 66-71; Summer 1963a.

Torrance protege discusses growing body of research linking creativity to teacher effectiveness. Relationship, however, is not simple. Creative teachers have certain reaction patterns toward world, and,, hence, affect their students differently.

Yamamota, K. "Relationships between Creative Thinking Abilities of Teachers and Achievement and Adjustment of Pupils." Journal of Experimental Education 32: 3-26; Fall 1963b.

Dissertation summarized shows: (1) no significant difference between teacher High and Low Creative groups in background factors; (2) high creative teachers show significantly stronger theoretical orientation; (3) no significant difference in classroom behavior. Post-test results on achievement battery and personality inventory analyzed by covariance method with controls for differences among pre-test scores and I. Q. 's showed that (4) interaction (significant) on reading comprehension between pupil creativity and pupil sex; (5) significant interaction on arithmetic skills between creativity and pupil creativity; (6) on personal adjustment, a significant second-order interaction among teacher creativity, pupil creativity and pupil sex; (7) on social adjustment a significant teacher creativity, main event; (8) on total (personal plus social) adjustment, a significant teacher creativity main effect.

Yamamoto, K. "Creative Writing and School Achievement." School and Society 91: 307-08; October 19, 1963c.

Correlations between creative writing and I. Q. are of comparable size with those of other creative tasks. The generalization seems to hold that G. I. plays some, but not the main role in creative thinking. The low correlations between creative writing scores and creative thinking scores are suggestive of somewhat different dimensions of creative performance being tapped by these 2 sets of tasks.

Yamamoto, K. "A Study of the Relationship between Creative Thinking Abilities of 5th Grade Teachers and the Academic Achievement and Personal Social Adjustment of Their Pupils." Dissertation Abstracts 23: 2801; 1963d.

Nineteen teachers were dichotomized into high creatives (HC) and low creatives (LC). HC teachers show a significantly stronger theoretical orientation, they react to more complex aspects of their environment. Results with pupils were somewhat equivocal but, in general, there was a significant reaction between teacher creativity and pupil creativity on arithmetic skills and personal adjustment. HC teachers also had better socially adjusted pupils.

Yamamoto, K. "Creative Thinking: Some Thoughts and Reflections." Exceptional Children 30: 403-10; May 1964a.

Careful review of literature with about 30 citations represents status survey of art and discusses unexplored frontiers.

Yamamoto, K. "Evaluation of Some Creativity Measures in a High School with Peer Nominations as Criteria." Journal of Psychology 58: 285-93; 1964b.

428 subjects from 7th to 12th grades at the University of Minnesota High School, given 2 tests of creative thinking and a peer-nomination form. The fluency, flexibility and inventive level were attained.

Test scores and peer nominations were correlated from -.85 to .65.

Yamamoto, K. "Threshold of Intelligence in Academic Achievement of Highly Creative Students." Journal of Experimental Education 32: 401-05; Summer 1964c.

One secondary and one elementary groups of students, highly creative, top 20 per cent. Classified into 3 sub-groups, high, low and middle intelligence. In the secondary population the "threshold" was observed as the high and middle groups achieved higher on the Iowa Tests of Educational Development than the low group did. No such threshold was observed for the elementary group. Article discussed shortcomings of the study and future suggestions.

Yamamoto, K. "A Further Analysis of the Role of Creative Thinking in High School Achievement." Journal of Psychology 58: 277-83; 1964d.

University of Minnesota High School students (272 9th through 12th graders). Each grade had 2 sub-groups and these were high and low creativity. Fifty-four subjects in each of these groups.

Found that the high creativity group performed significantly better than the low creativity group on all the subjects in the achievement series.

Mean IQ to which achievement scores were adjusted was about 120. This supports Torrance's suggestion that a cutoff point is around 120 IQ.

Yamamoto, K. "Role of Creative Thinking and Intelligence in High School Achievement." Psychological Reports 14: 783-89; 1964e.

A total of 272 high school students were administered a battery of tests of creative thinking. Lorge-Thorndike Intelligence Test and Iowa Tests of Educational Development. Three groups of "gifted" students were identified in each grade: (1) High Intelligence Group--a group in the upper 20% on IQ but not in the upper 20% on creativity; (2) High Creativity Group--a group in the upper 20% on the test of creativity but not in the upper 20% on IQ; and (3) High Intelligence-Creativity Group--a group high on both IQ and creativity. Groups 1 and 2 = 26, group 3 = 28. If IQ alone had been used as the basis for identifying "giftedness," about 48% of those in the upper 20% on creativity would have been excluded. When r s between IQ and creativity were computed for each grade, it was found that, except in the 10th grade, coefficients were less than .20 and statistically nonsignificant. In the 10th grade, $r = .56$ and statistically significant. For all 272 subjects, an r of .30 was significant ($p = .01$); r s between IQ and creativity in the 3 "gifted" groups were statistically nonsignificant. There was no difference among these 3 groups on the various achievement measures. No sex difference was found. The findings supported the results of previous studies of Getzels and Jackson (1962) and Torrance (1959).

Yarmolonsky, N. Recognition of Excellence. Glencoe, Illinois: New Horizon Press, 1960.

Concerned with the identification of excellence in the school room, the author notes that official standards of excellence often do not correspond to productivity, creativity, nor values of the students peers. Cognitive and non-cognitive aspects of excellence, and tests designed to measure same are discussed. A final chapter talks about the international situation.

Yoder, H. W. "The Gifted Child and Pastoral Counseling." Gifted Child Quarterly 5: 128-31; Winter 1961.

Case history illustrates value of pastoral counseling with parents of gifted child.

Young, C. R. "Factors Associated with Achievement and Underachievement among Intellectually Superior Boys." Unpublished Ed.D. thesis, Columbia: University of Missouri, 1962. Dissertation Abstracts 23: 2406; 1963. University Microfilms, Inc., 63-1547.

With N=66 matched pairs, significant differences in favor of achievers were found in number of books in home, travel experience and factoring 11 scales of the CPI (dominance, well-being, responsibility, socialization, tolerance, communability, self-control, both achievements, intellectual efficiency and femininity).

Youtz, R. P. Compendium of Research on Creative Imagination. Buffalo, New York: Creative Education Foundation (1614 Rand Bldg.); see also Appendix of Parnes, S. J., and Harding, H. F., editors. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962a.

Booklet of 20 pages of annotated bibliography mostly on training in brainstorming and creative problem-solving.

Youtz, R. P. "Psychological Foundations of Applied Imagination." (pp. 193-215) in Parnes, S. J., and Harding, H. F., editors. A Source Book for Creative Thinking. New York: Charles Scribner's Sons, 1962b.

Deals with theories underlying the principles of Applied Imagination; then cites a number of research findings supporting the thesis.

Zehrbach, R. R. A Study of Intellectual Maturity in Gifted Elementary School Boys. Unpublished doctoral thesis, Nashville, Tennessee: George Peabody College for Teachers, 1964. Dissertation Abstracts 24: 1927; 1964.

Factor analysis study found (1) ideational fluency, (2) developmental factor, (3) achievement and intellectual maturity.

Ziehl, D. C. "An Evaluation of an Elementary School Enriched Instructional Program." Unpublished Ed.D. thesis, Buffalo, New York: University of Buffalo, 1963. Dissertation Abstracts 24: 2743; 1964.

Found in favor of enriched experimental group vs. controls in a regular program. Neither program was grouped.

Ziller, R. C., and others. "Group Creativity Under Conditions of Success or Failure and Variations in Group Stability." Journal of Applied Psychology 66: 43-49; 1962.

Does group stability affect creative output? Open groups submitted more and more original captions than did closed groups. Groups where failure was stressed evaluated their performance lower, and found sessions less fun than success groups.

Zirbes, Laura. Spurs to Creative Teaching. New York: G. P. Putnam's Sons, 1959.

More creative ways for teachers to work, Applications of the principles of creativity to social studies, language arts, reading, arithmetic, music and arts. Suggestions for creative approaches to preservice and inservice preparation of teachers.

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The entries in the taxonomy are listed by principal author and date of publication (first two figures omitted), NOT by page.

The taxonomy goes roughly as follows:

.01-.09 Non-educational aspects of creativity,

.1-.9 Educational aspects of creativity,

1-9 Educational aspects of giftedness.

The taxonomy has been constructed empirically through an attempt to sort citations into a number of more or less evenly distributed categories. Thus the taxonomy reflects where research has been done not where it ought to be done. An attempt has also been made to keep it rather congruent with the taxonomy in our earlier effort (Gowan 61), which should also be consulted by the conscientious scholar as there is practically no overlap. Finally an attempt has been made to keep the creativity section (.1-.9) parallel with the gifted section (1-9) so that in general the taxonomic number of a particular aspect of giftedness is ten times its opposite number in creativity

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